Panasonic

Video Cassette Recorder NV-FS1
Series

VHS
PAL
625

Operating Instructions

Before attempting to connect, operate or adjust this product, please read these instructions completely.

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IMPORTANT

Your attention is drawn to the fact that recording of pre-recorded tapes or discs or other published or broadcast material may infringe copyright laws.

WARNING

TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.

NV-FS1A: Australian model
NV-FS1EA: New Zealand model

FOR YOUR SAFETY

■ **DO NOT REMOVE OUTER COVER.**
To prevent electric shock, do not remove cover. No user serviceable parts inside. Refer servicing to qualified service personnel.

[redacted] is the safety information.

HQ (High Quality) Picture System

Video recorders carrying the HQ symbol mark feature the new VHS High Quality Picture System. This system assures complete compatibility with VTRs that use the conventional VHS system.

HQ
Hi-Fi

CAUTIONS

Please read these cautions before you operate this VTR.

Avoid Sudden Changes in Temperature

If the VTR is suddenly moved from a cold place to a warm place, moisture may form on the tape and inside the VTR. In this case, the Dew Indicator "d" will flash on and off and the VTR will not operate.

Humidity and Dust

Avoid places where there is high humidity or much dust, which may cause damage to internal parts.

Do Not Obstruct the Ventilation Holes

The ventilation holes prevent abnormal increase in temperature. Do not block or cover these holes. Especially avoid covering the holes with soft materials such as cloth or paper.

Keep away from High Temperature

Keep the VTR away from extreme direct heat such as direct sunlight, heating radiators, or closed automobiles.

Keep Magnets away

Never bring a magnet or magnetized object near the VTR because it will adversely affect the performance of the VTR.

No Fingers or Other Objects Inside

Touching internal parts of this VTR is dangerous, and may cause serious damage to the VTR. Do not attempt to disassemble the VTR. There are no user serviceable parts inside.

Keep Water away

Keep the VTR away from flower vases, tubs, sinks, etc. CAUTION: If liquids are spilled into the VTR, serious damage could occur. If you spill any liquid into the VTR, consult qualified service personnel.

Cleaning the VTR

Wipe the VTR with a clean, dry cloth. Never use cleaning fluid, or other chemicals. And do not use compressed air to remove dust.

Stacking

Place the VTR in a horizontal position, and do not place anything heavy on it.

Lightning

To avoid damage by lightning, disconnect the aerial plug from the VTR.

Video Cassette

Do not attempt to change a standard VHS tape to S-VHS format. The tape material is different and so if you record on S-VHS VTR using a modified VHS tape the picture quality will be inferior to that of a S-VHS video cassette.

Video Head Clogging

The video heads are the means by which the recorder places picture signals on the tape during recording, and reads picture signals from the tape during playback. If these heads become dirty and clogged from long use, the signals can no longer be recorded correctly, and the playback picture will be distorted accordingly. This is the case, for example, during the playback of a tape, the sound is reproduced normally, but no picture is seen, or the picture is greatly distorted. When such a symptom case occurs have the recorder checked by qualified service personnel.

If Dew Condensation Forms in the VTR

Condensation may form in the VTR if:

- The VTR is in a room where the heater has just been turned on.
- The VTR is in a room with steam or high humidity.
- The VTR is brought from cold surroundings into a well-heated room.
- The VTR is suddenly brought from cool surroundings, such as an air-conditioned room or car, to a place which is hot and humid.

When dew forms in the VTR: (Refer to page 6)
The Dew Indicator "d" on the Multi-Function Display will flash on and off and all the function buttons are made non-operational to protect the tape and the video heads.

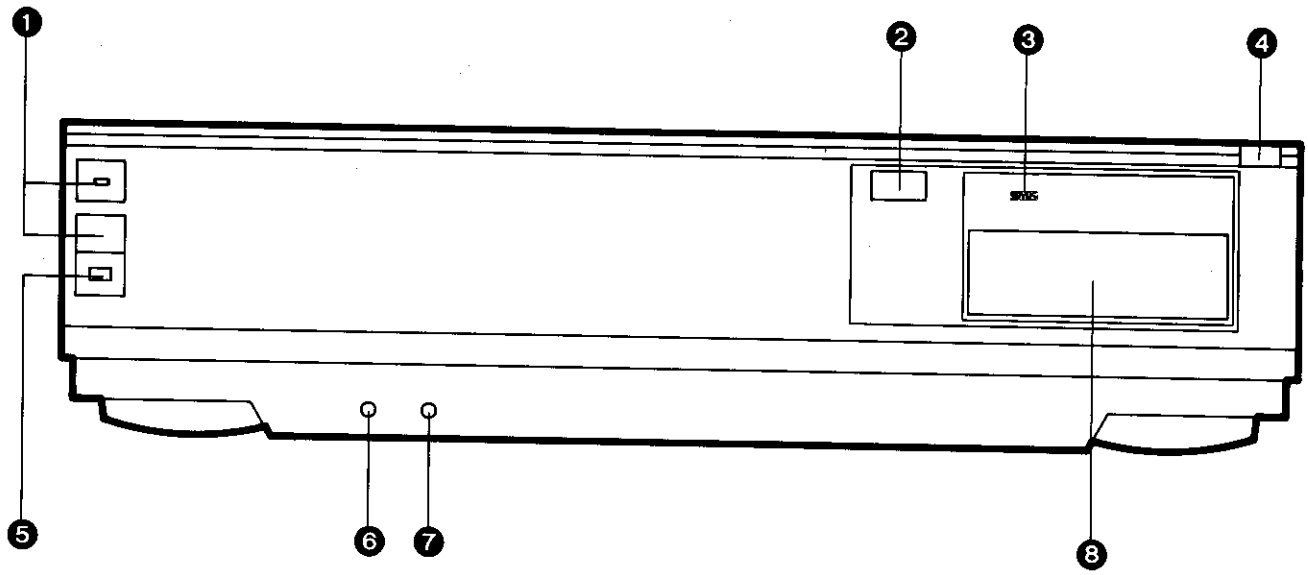
When the Dew Indicator flashes, wait until this indicator disappears.

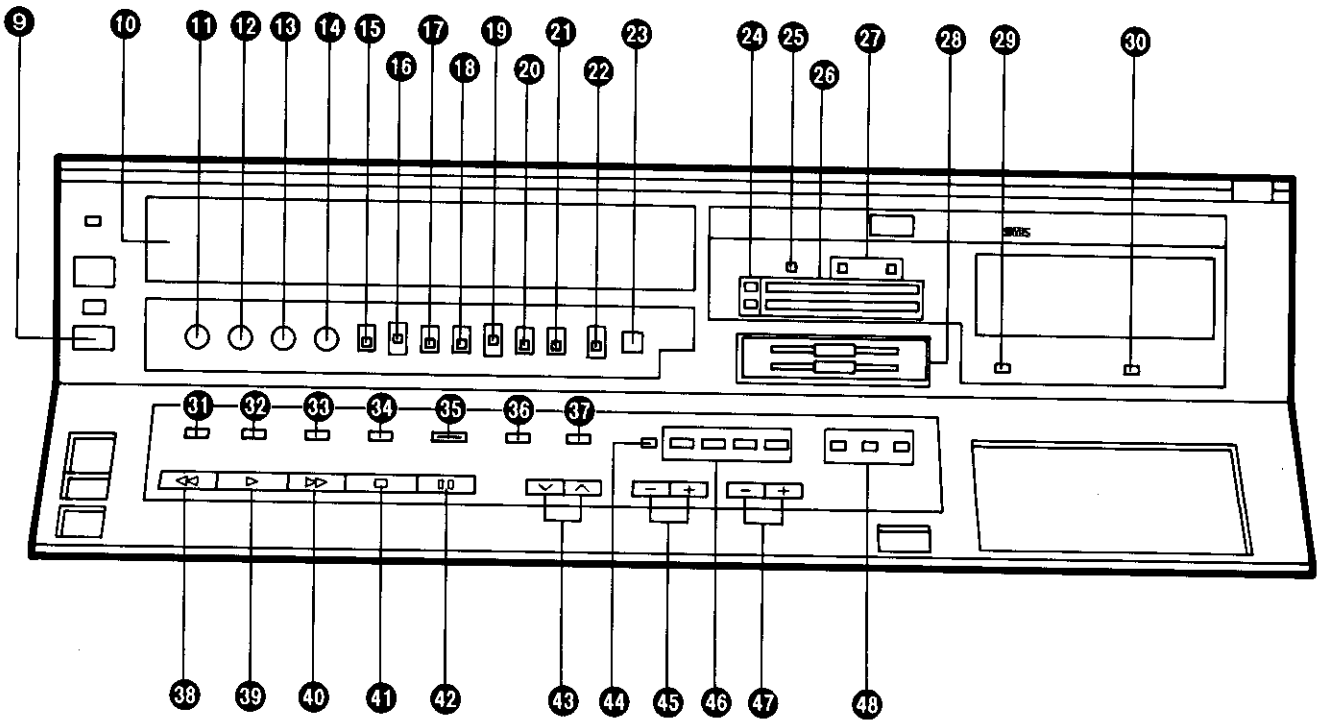
- If dew condensation forms inside the VTR while the VTR On/Off Switch is off, it will turn on automatically and the Dew Indicator will flash on and off. As soon as the dew condensation has been dissolved, the VTR will turn itself off again.

- If the Dew Indicator continues to stay on, have the recorder checked by qualified service personnel.

CONTROLS AND COMPONENTS

FRONT





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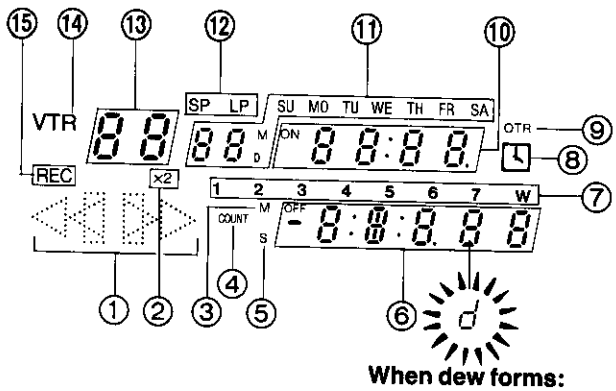
CONTROLS AND COMPONENTS (CONT'D)

Multi-Function Display



When dew forms:
Dew Indicator

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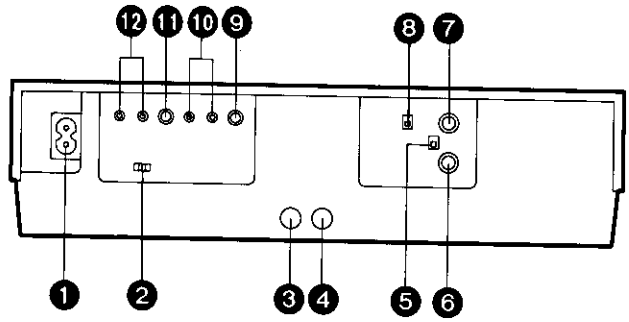
REAR



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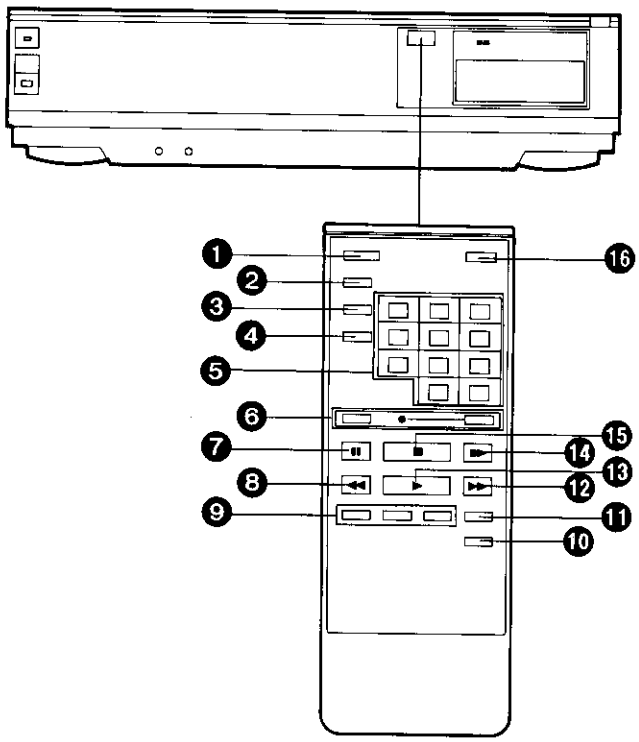
PROGRAMMABLE REMOTE CONTROLLER AND DIGITAL SCANNER

Part Number: VEQ 0915



❶ **VTR On/Off Button**
❷ **Audio Select Button**
❸ **Memory/Search Button**
❹ **Reset/Index Button**
❺ **Programme Position (Channel) Selector Buttons**

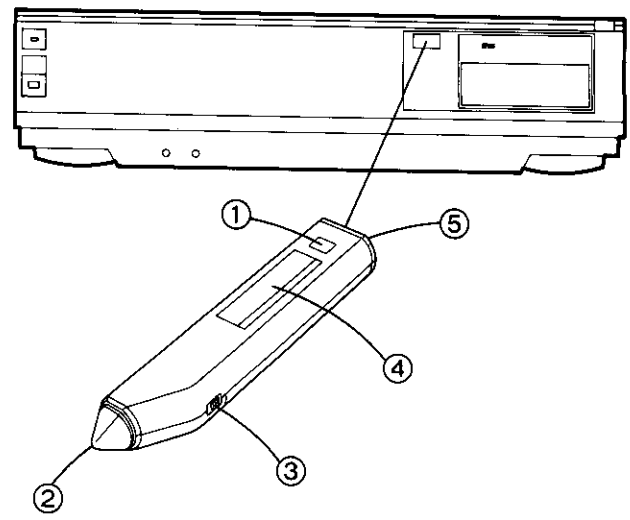
select channel	press button
1–9	[1] — [9] respective channel
10	[10/0]
20	[-/--] → [2] → [10/0]
11–32 for example 32	[-/--] → [3] → [2]

If more than 5 seconds pass between the first, second and third push, the channel will not be changed.

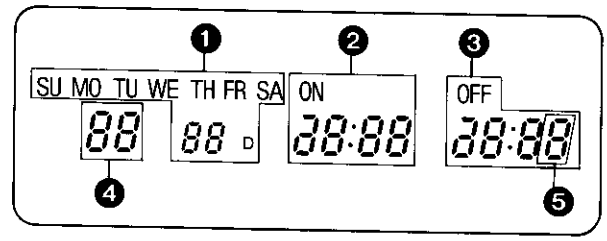
❻ **Record Buttons (●)**
Both buttons must be depressed together to activate the Record function.

❼ **Pause/Still Button (❚❚)**
❽ **Rewind ◀◀/Review [◀◀] Button**
❾ **Slow Buttons**
❿ **Intro Scan Button**
⓫ **Double Speed Playback Button (×2)**
⓬ **Fast Forward ▶▶/Cue [▶▶] Button**
⓭ **Play Button (▶)**
⓮ **Still Advance Button (❚▶)**
⓯ **Stop Button (■)**

Part Number: VEQ 0692



① **Transmit Button**
② **Bar Code Reading Section**
③ **Digital Scanner On/Off Switch**
④ **Bar Code Reader Display**



❶ Date Display
❷ Start Time Display
❸ End Time Display
❹ Channel Display
❺ Check Indicator

⑤ **Transmitting Section**

How to Operate the Digital Scanner

Set the Digital Scanner On/Off Switch to "ON".

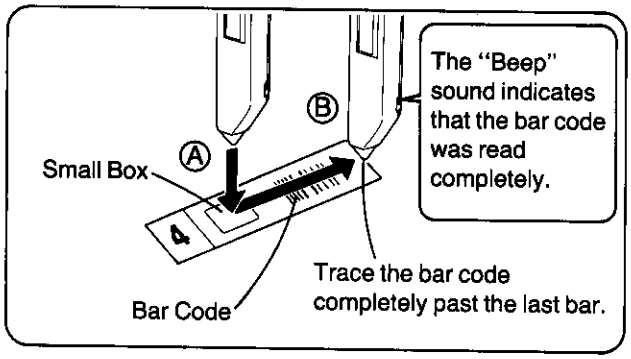
- If no operation is performed for more than 25 seconds, the scanner will automatically switch over to the power-saving standby condition and the lamp will go off. (In this case, if bar codes have already been read but not yet transmitted to the VTR, the data will be cancelled.)
- When the Digital Scanner On/Off Switch is set to "ON" but the lamp is not lit, set the switch to "OFF" and then to "ON" again.

PROGRAMMABLE REMOTE CONTROLLER AND DIGITAL SCANNER (CONT'D)

Tracing the Bar Codes

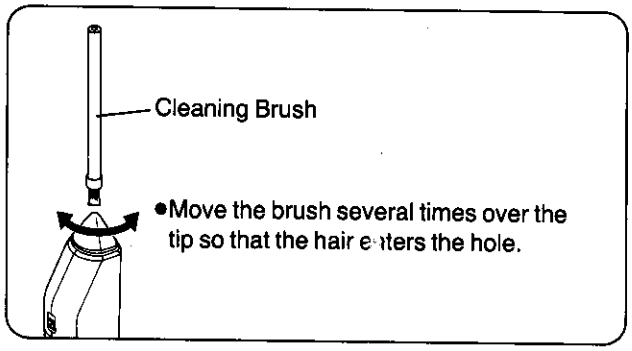
Ⓐ Place the Digital Scanner vertically on the Small Box.

Ⓑ Trace the bar code quickly in the direction of the arrow.


Small Box
Ⓐ
Ⓑ
The "Beep" sound indicates that the bar code was read completely.
Trace the bar code completely past the last bar.
Bar Code

Cleaning Brush for the Digital Scanner

If the sensor in the tip of the Digital Scanner becomes clogged with dirt, it may become impossible to read the bar codes. Clean the tip from time to time with the supplied brush as illustrated below.
Keep this brush in the storage case of the Digital Scanner.



- Treat the Programming Sheet with care. If the sheet gets dirty or scratched, the bar code reading may become impossible.
- Protect the Digital Scanner from strong shocks and vibration. Keep it away from water and places with high temperature and humidity.
- If the bar code is traced slowly, it cannot be read correctly.
- When there is no "Beep" sound, the reading of the bar code is incomplete. Trace the bar code again.
- When using the Programming Sheet, put it on flat surface. Reading the bar codes while holding it in your hand or bending it, may result in incorrect operation.
- Do not deviate from the bar code, nor stop tracing halfway.
- Do not slant the scanner to trace the bar code.

Power Source for the Remote Controller (Digital Scanner)

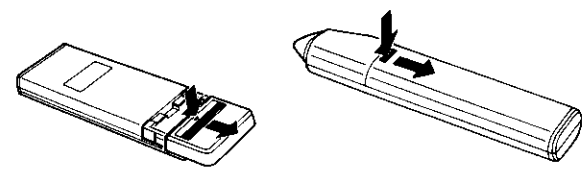
■ The Remote Controller is powered by two IEC "R6" (Digital Scanner: 4IEC "R03") size batteries. The life of the batteries is about one year, however, it depends on the frequency of use. Inspect and replace if necessary. Check the batteries regularly for leakage.

CAUTION FOR BATTERY REPLACEMENT

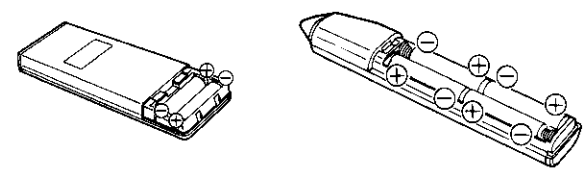
- Load the new batteries with their polarities (⊕ and ⊖) aligned correctly.
- Do not apply heat to batteries, or internal short-circuit may occur.
- If you do not intend to use the Remote Controller or Digital Scanner for a long period of time, remove the batteries and store them in a cool and dry place.
- Remove spent batteries immediately and dispose of them.
- Do not use old and new batteries together. (Also never use an alkaline battery with a manganese battery.)

Load the batteries as follows:

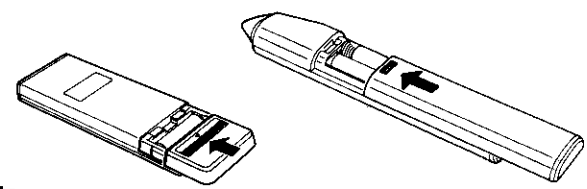
❶ Remove the battery compartment lid.



❷ Place the batteries in the battery compartment as indicated inside the battery compartment.



❸ Replace the lid.



Note:

- The infra-red beam should be transmitted directly at the Infra-red Remote Control Receiver on the front of the VTR.
- Direct sunlight may interfere with the beam.
- The lightsensing angle of the Infra-red Remote Control Receiver in the VTR is about 30° for each side from the centre.
- The unit should be used within a range of about 7 meters from the front of the VTR.

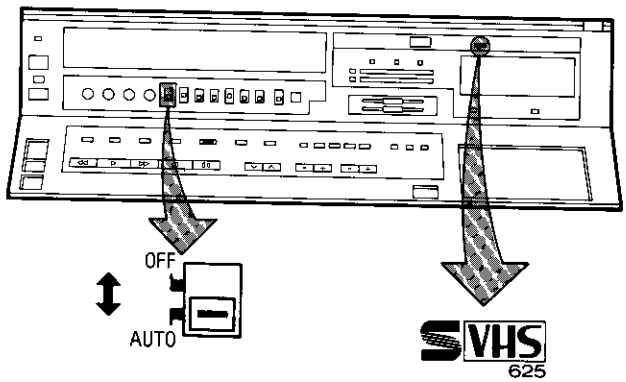
Recommendation

To save battery power, make sure to set the Digital Scanner On/Off Switch to "OFF" after using the Digital Scanner. When the batteries are exhausted, the bar code reading can no longer be performed.

S-VHS FORMAT

This VTR uses the S-VHS format that makes it possible to obtain high resolution and high picture quality by using the high-performance S-VHS video cassette tapes.

When making a recording on an S-VHS cassette tape, select the desired recording format with the S-VHS Selector.



S-VHS Indicator

S-VHS-Selector

AUTO: The recording will be made in the S-VHS format.
- The S-VHS Indicator lights up.

OFF: The recording will be made in the VHS format.
- The S-VHS indicator does not light up.

(It is possible to make a recording on an S-VHS cassette tape in the VHS format, for example, in order to play back the tape on another VHS VTR.)

Using VHS Cassettes

The recording is made in the VHS format irrespective of the position to which the S-VHS Selector is set.

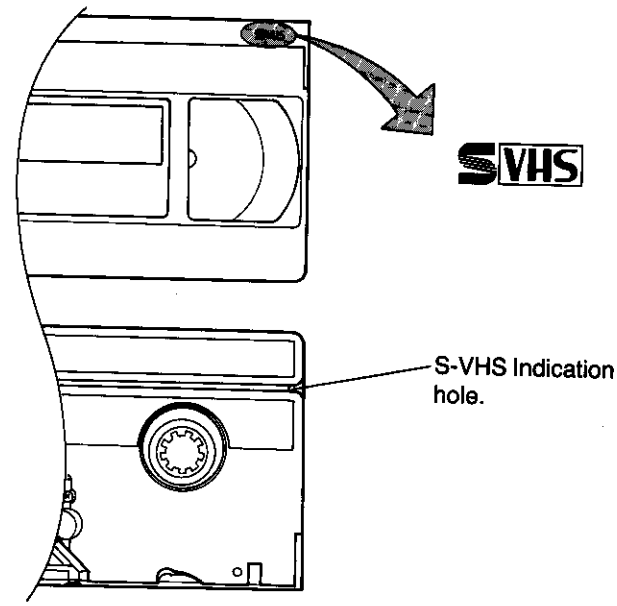
Playback of S-VHS and VHS Cassettes

It is not necessary to operate the S-VHS Selector.

- Cassette tapes recorded in the S-VHS format are automatically played back in the S-VHS format and tapes recorded in the VHS format are automatically played back in the VHS format.

When an S-VHS tape which was recorded in the VHS format is played back, the S-VHS Indicator does not light up.

When a tape which was recorded in the S-VHS format is played back on a conventional VHS VTR, it is not possible to obtain playback picture.



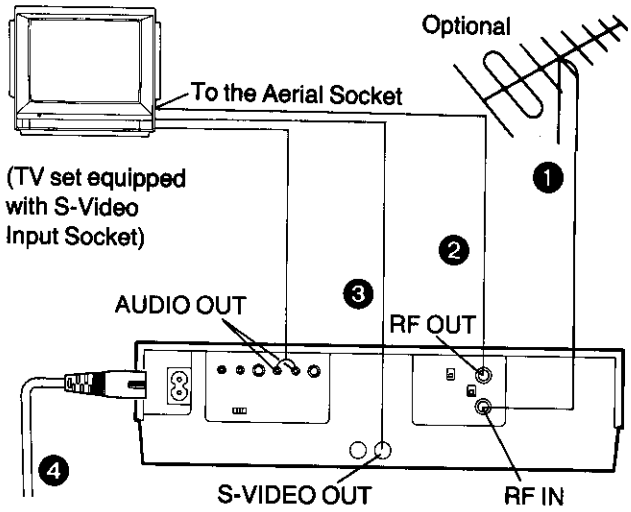
S-VHS tapes have an identification hole on the underside of the cassette to distinguish them from VHS tapes. When recording Panasonic's S-VHS VTR detects this hole to allow it to switch automatically between VHS and S-VHS modes, eliminating the need for manual switching.

S (SEPARATE)-VIDEO SOCKET, INSTALLATION

The conventional video sockets of VTRs output (input) a combination of the luminance signal (Y) and color signal (C) which are recorded on the video tape. The new S (Separate)-Video Socket allows separate transmission of these two signals to a TV set or separate input of these two signals in order to obtain clearer pictures.

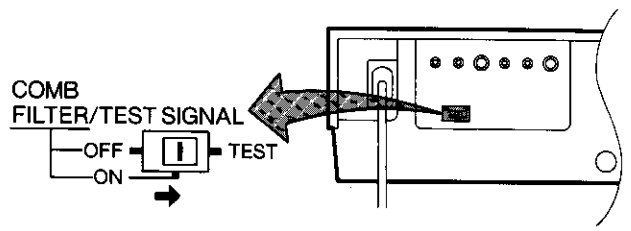
The connection with the S-Video Cable can also be used for playback of a tape that was recorded in the conventional VHS system. The "S" in the "S-Video Socket" stands for "SEPARATED Y/C" not for "S-VHS".

Connection to a TV Set with S-Video Socket



1. Connect the external aerial to the RF Input Socket on the VTR.
2. Connect the aerial terminal on your TV set to the RF Output Socket on the VTR with the supplied DIN-DIN Coaxial Cable.
3. Connect the S-Video Output Socket on the VTR with the S-Video Input Socket on the TV set, and the Audio Output Sockets on the VTR with the Audio Input Sockets on the TV set.
4. Connect the AC Mains Lead to the AC Mains Socket of the VTR, and a mains outlet.

Comb Filter/Test Signal Switch



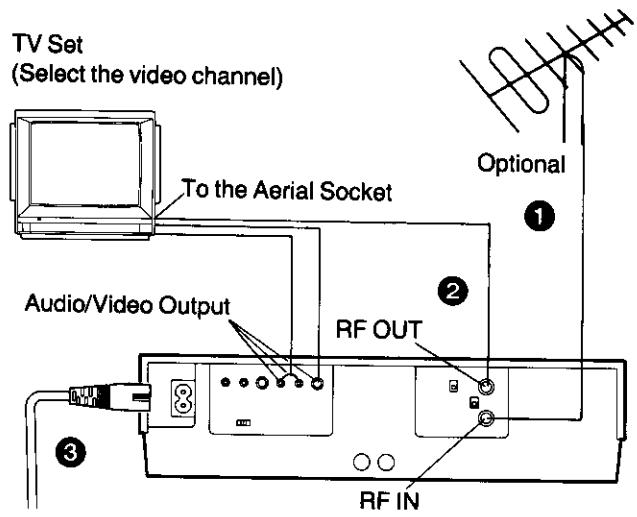
This VTR is equipped with a Comb Filter.

- To achieve higher resolution, the Comb Filter/Test Signal Switch can be set to the "On" position for recording.

Note: When recording via the S-VIDEO Input Socket, this switch does not function.

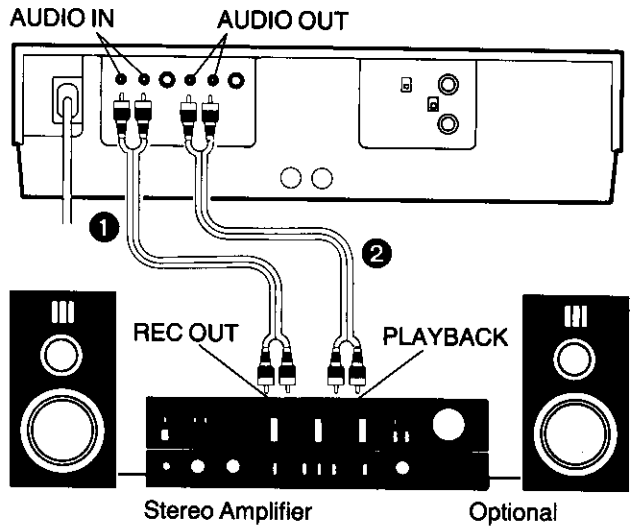
INSTALLATION

NV-FS1A:
FOR YOUR SAFETY
Install any external aerial to AS 1417. 1.



1. Connect the external aerial to the RF Input Socket on the VTR.
2. Connect the aerial terminal on your TV set to the RF Output Socket on the VTR with the supplied DIN-DIN Coaxial Cable.
3. Connect the AC Mains Lead to the AC Mains Socket of the VTR to the mains outlet.

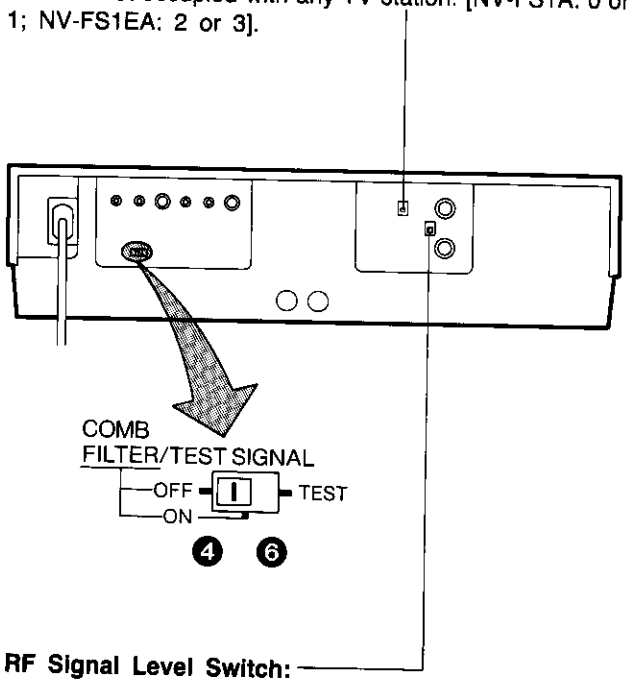
Connection to a Stereo Amplifier



1. Connect the Audio Input Sockets on the VTR to the REC OUT Sockets on the Stereo Amplifier.
2. Connect the Audio Output Sockets on the VTR to the PLAYBACK Sockets on the Stereo Amplifier.

TUNING THE TV SET TO THE VIDEO PLAYBACK CHANNEL

Video Playback Channel Selector [NV-FS1A, EA]
This switch is used to select the Video Playback channel which is not occupied with any TV station. [NV-FS1A: 0 or 1; NV-FS1EA: 2 or 3].

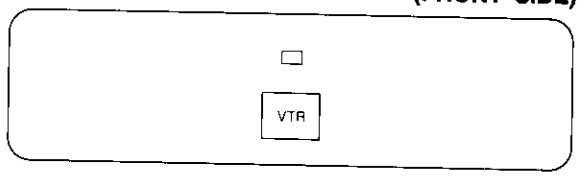


RF Signal Level Switch:
Used to attenuate the reception of the VHF and/or UHF aerial signals.
If the reception is normal, set to "HIGH". If the signal is strong (stripes appear in the upper part of the picture), set to "LOW".

- When using an RF connection to a Stereo TV, the programme will be only displayed as a mono audio reception on a Stereo TV set, as the RF modulator in the VTR is only mono audio.
- To gain full Stereo effect of your VTR, the separate Audio/Video Output Sockets should be used or the Audio signal should be supplied to your Hi-Fi System.

1. Turn the TV set on and select the AV programme position or another programme position that is not occupied by any TV station.
2. Press the VTR On/Off Switch to turn the VTR On.

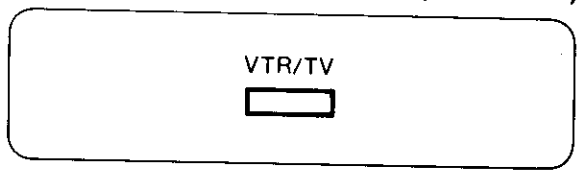
(FRONT SIDE)



- The corresponding indicator lights up.

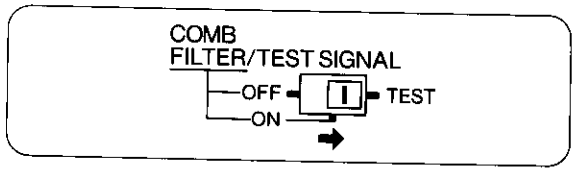
3. Press the VTR/TV Selector to "VTR" position.

(FRONT SIDE)



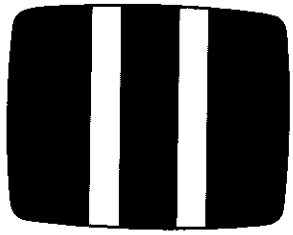
- VTR Indicator will appear in the Multi-Function Display.

4. Set the Comb Filter/Test Signal Switch to "TEST".



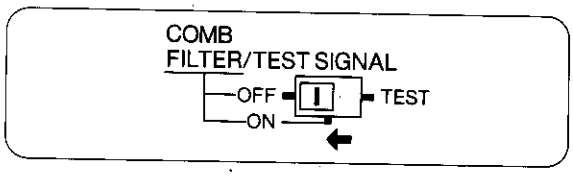
5. Tune the selected programme position (channel) of the TV set to the VHF channel shown below for your model. Confirm on the TV set that the received test pattern is as shown below.

NV-FS1A VHF channel 0 or 1*
NV-FS1EA VHF channel 2 or 3



NV-FS1A only
*In some areas channel 0 may be used by local TV station. In this case switch to channel 1.

6. Set the Comb Filter/Test Signal Switch to "Off". Your TV is now ready to receive the RF output signal from the VTR.

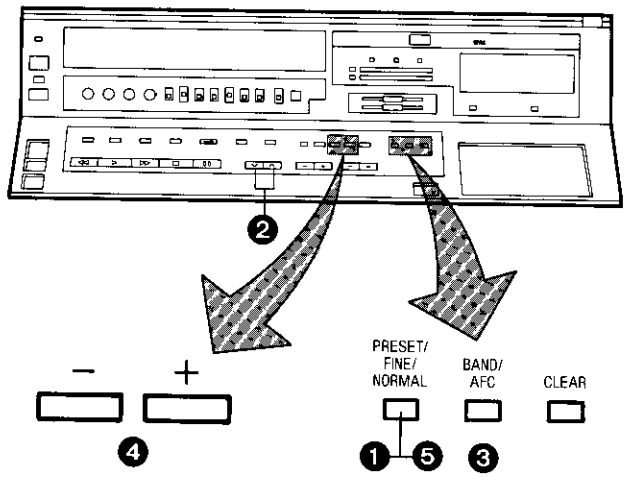


7. To check, play back a pre-recorded tape and confirm picture quality.

8. In some cases, further fine tuning is required in order to get optimum colour and sound. Note that the test signal is only a guide.

SETTING THE TUNER IN THE VTR

The tuner in the VTR makes it possible to receive TV broadcasts and to record these programmes without having to turn on the TV set.



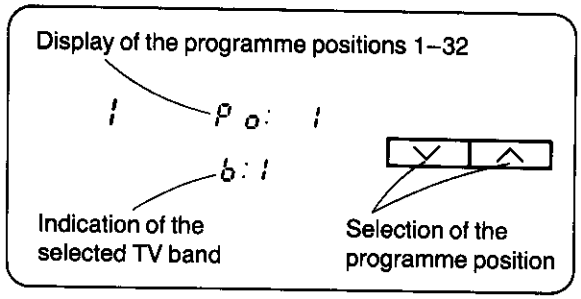
Preparation

- Turn the TV set on and select the programme position (channel) which you have tuned to the video playback channel.
- Press the VTR On/Off Switch to turn the VTR on.
- Set the Input Signal Selector to "Tuner".
- Press the VTR/TV Selector to "VTR" position.

❶ Press the Preset/Fine/Normal Button.
The indication on the Multi-Function Display changes from the clock indication to the position indication.

❷ Press the Channel Up or Down Button to select a programme position (channel) which you want to tune to a TV station.

❸ Presee the Band/AFC Button to select the "I", "III" or "U" position.

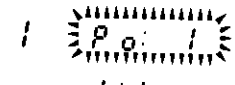


NV-FS1A	0–5	5A–11	21–69
NV-FS1EA	1–3	4–11	21–69

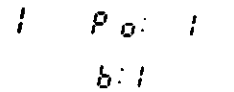
The tuner in the VTR can be preset with up to 32 programme positions.

❹ Press the "+" or "−" Button.

During the station search (The position indication flashes on and off.)



Tuned condition

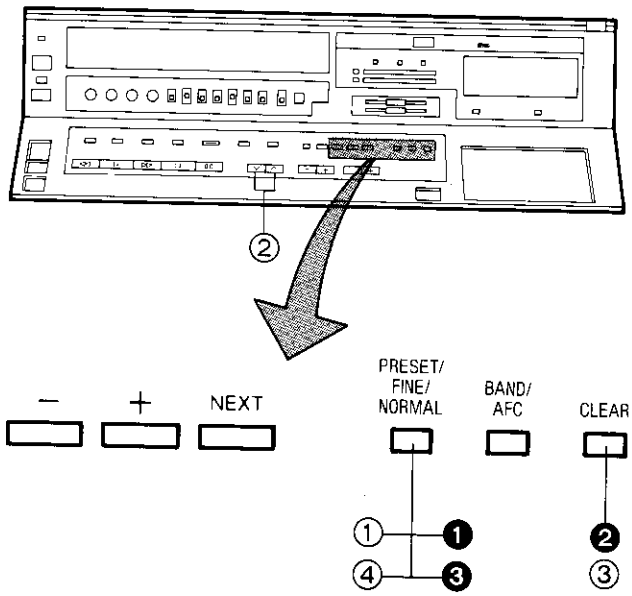


- When the tuning of the station is completed, the indication stops flashing and the tuned station is automatically memorized.
- At every push of the "+" or "−" Button, the station will be tuned automatically.

Repeat steps ❷–❹ for each TV station you want to tune to a desired programme position.

❺ Press the Preset/Fine/Normal Button twice.
The indication on the Multi-Function Display changes to the clock indication.

- If a strong interference signal exists, the VTR may tune to this signal although no picture may be present. If this condition occurs, press the "+" or "−" Button to continue searching.

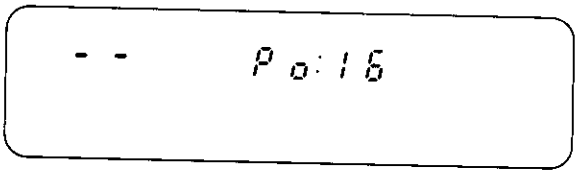


Blanking of Unoccupied Programme Positions

① Press the Preset/Fine/Normal Button.

② Press the Channel Up or Down Button to select a programme position (channel) which you do not want to tune to a TV station.

③ Press the Clear Button ("– –" will be displayed in the Programme Position Indication).



- Repeat steps ② and ③ for any programme positions on which no TV stations are to be tuned. Afterwards, these programme positions will be skipped during Up/Down selection of the programme position.

④ Press the Preset/Fine/Normal Button twice.

Cancelling the Clear Function (Blanking)

❶ Press the Preset/Fine/Normal Button.

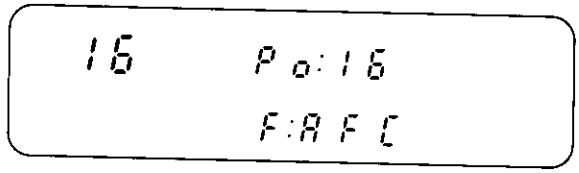
❷ To cancel the blanking of a programme position, select that programme position on the VTR and then press the Clear Button.

❸ Press the Preset/Fine/Normal Button twice.

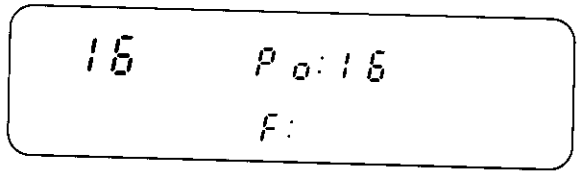
Fine Tuning Procedure

If fine tuning is necessary, for example for a weak station which is close to a strong station:

1. Press the Preset/Fine/Normal Button twice.



2. Press the "+" or "–" Button to obtain the best tuning condition.



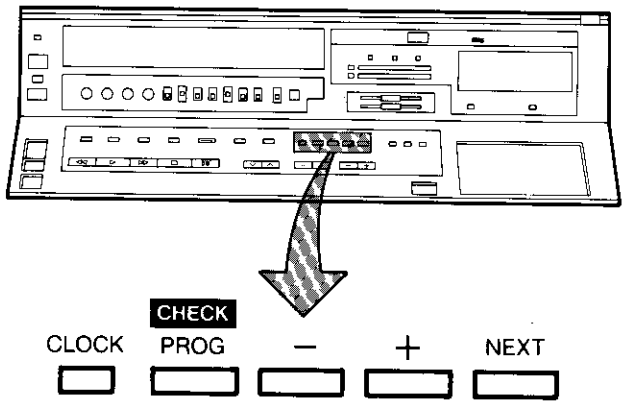
- "AFC" Indicator will not be displayed.

- To return the tuning to its former state, press the Band/AFC Button. (If AFC is required.)

3. Press the Preset/Fine/Normal Button.
To return the tuning to the setting for normal viewing.

SETTING THE CLOCK TO THE PRESENT TIME

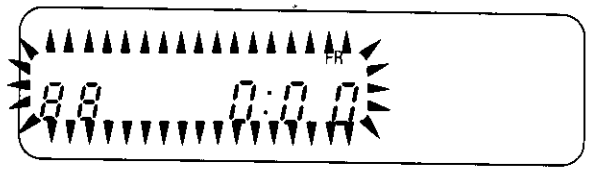
The built-in digital clock employs the 24-hour system.



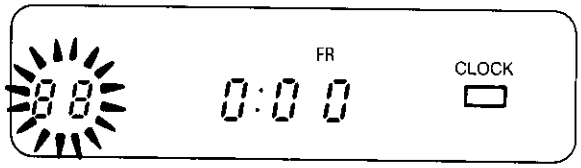
For Example: Set the clock for Sunday, October 10, 1999, 9:10.

- Connect the VTR to the mains outlet.
- Press the VTR On/Off Switch to turn the VTR On.

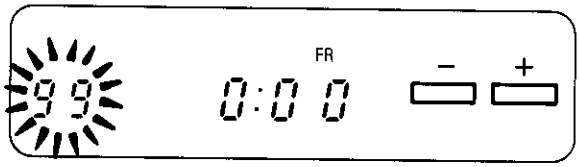
❶ When connecting this VTR to the mains or after a long power failure, both the date and time indications flash.



❷ Press the Clock Button to start the date and time setting.

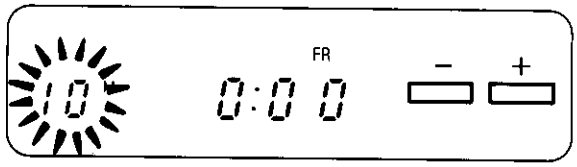


❸ Press the "+" or "–" Button to set the year.



❹ Press the Next Button.

❺ Press the "+" or "–" Button to set the month.

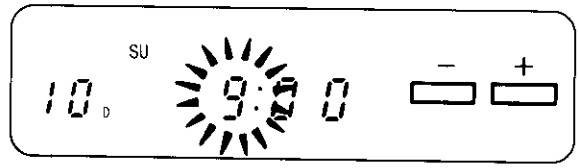


❻ Press the Next Button.

❼ Press the "+" or "–" Button to set the date.

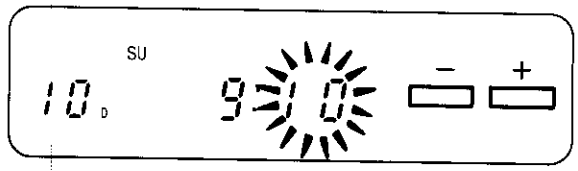
❽ Press the Next Button.

❾ Press the "+" or "–" Button to set the hour.



❿ Press the Next Button.

⓫ Press the "+" or "–" Button to set the minute.



⓬ Press the Clock Button when the present time becomes exactly 9:10'00".

At every push of the Next Button, the flashing indication changes in the following order.

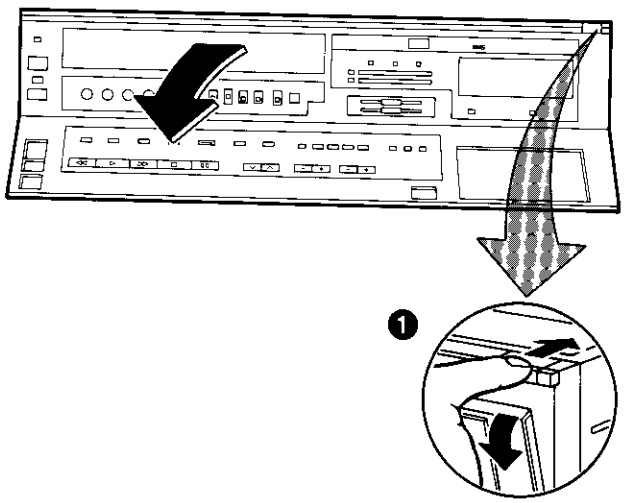
YEAR→MONTH→DATE→HOUR→MINUTE

- The timer back-up system maintains the clock operation for about 60 minutes in case of a power failure. However, it takes more than 60 minutes for the back-up circuit to become operational, after the VTR is connected to the mains.
- The Timer Record Function should be set to "Off", otherwise the VTR cannot be operated normally. In this case, the Timer Record Indicator "⏲" will flash to warn you.
- During date setting, the corresponding day indication is simultaneously set.
- The clock/timer of the VTR is programmed with the calendar up to the end of 2002.

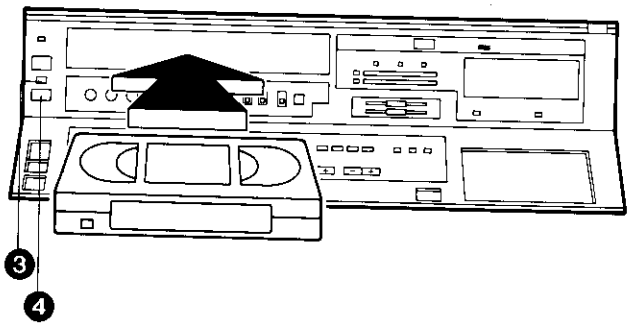
THE VIDEO CASSETTE

Inserting a Video Cassette (Auto Operation)

❶ Press the Control Panel Open Button.



❷ Insert the video cassette as shown. The VTR will be turned on automatically and the cassette will be automatically drawn into the VTR.



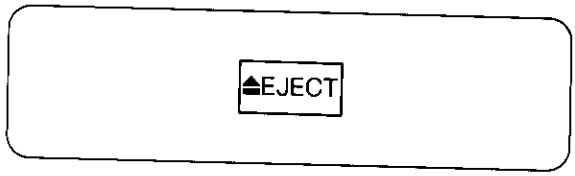
❸ When a video cassette is inserted, the "⊙⊙" mark will appear.

Notes:

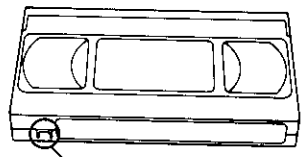
- When a video cassette with broken out erasure prevention tab (for example a pre-recorded tape) is inserted, playback will start immediately.
- Use VHS and S-VHS video cassette tapes only.

Removing a Video Cassette

❹ Press the Eject Button (⏏).

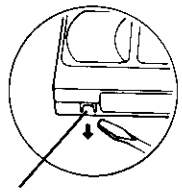


Simply press the Eject Button; the VTR turns itself on, ejects the cassette and turns itself off again.



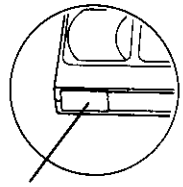
Erasure Prevention Tab

To prevent accidental erasure



Break off the tab with a screwdriver.

To record again

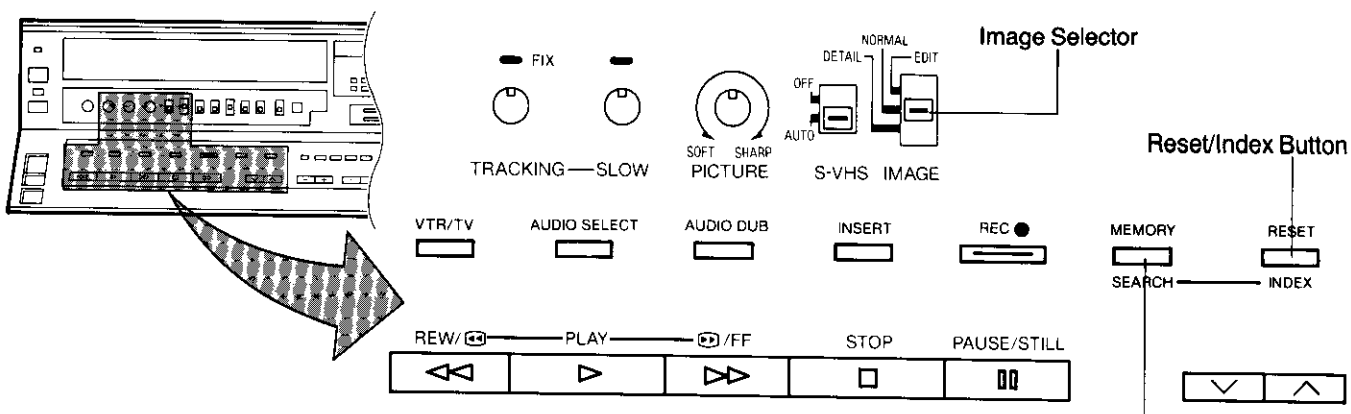


Cover the hole with adhesive tape.

Auto Operation

The extremely convenient Auto Operation functions of this VTR include Auto Start and Auto Play when a recorded cassette with broken out tab is inserted, Auto Eject which indicates that an inserted cassette is not suitable for recording, VTR-Off Eject for ejecting a cassette even with the VTR off, and Auto Rewind at the end of a tape. If the VTR On/Off Switch is pressed during the rewind mode including Auto Rewind, the VTR will eject the cassette and turn itself off when rewinding is completed.

PLAYBACK

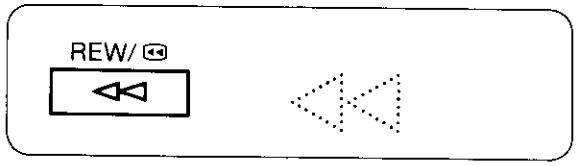


Preparation

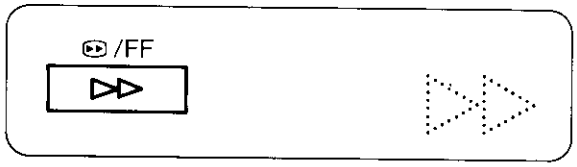
- Make sure that the Timer Record Function is set to "Off".
- Insert a recorded video cassette.
  When a video cassette is already inside the VTR, press the VTR On/Off Switch to turn it on.
- Turn the TV set on and select the video playback channel.

Rewind and Fast Forward

Press the Rewind ◀◀/Review ⏪ Button to rewind the tape.



Press the Fast Forward ▶▶/Cue ⏩ Button to wind the tape forward rapidly.



Lap Time Counter

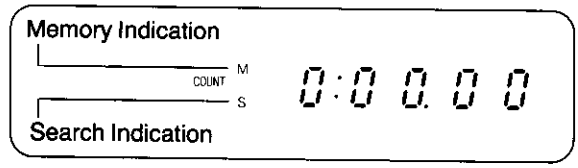
It shows the elapsed recording or playback time.

The "–" indication will appear when the tape is rewound further than the tape counter position "0:00.00".

- If the figures on the Tape Counter do not change during Fast Forward, Rewind or any of the Playback functions, this means that nothing is recorded on that tape section.
- The Tape Counter is automatically reset to "0:00.00" when the video cassette is ejected.

Memory/Search Button

Repeatedly pressing this button will change the indication in the following order: "M" (Memory) → "S" (Search) → both indications are off → "M"...



Memory Function

The Memory function makes it simple and fast to find a certain position on the tape later again, simply by pressing the Reset/Index Button at that position to set the tape counter to "0:00.00" and by pressing the Memory/Search Button. During Rewind or Fast Forward, the tape will then stop at approximately the desired position.

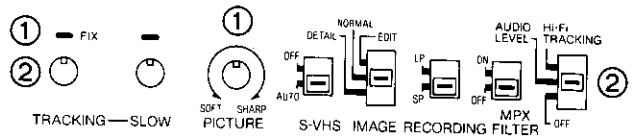
Image Selector

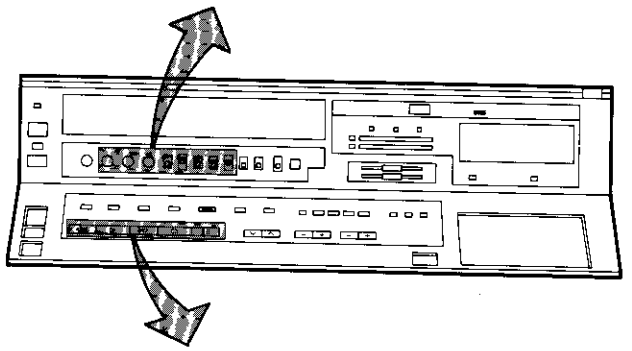
EDIT: For editing operations such as dubbing.

NORMAL: For ordinary use of the VTR.

DETAIL: For playing back a pre-recorded S-VHS cassette tape. In case of a tape recorded in the VHS mode, this setting has not influence on the operation.

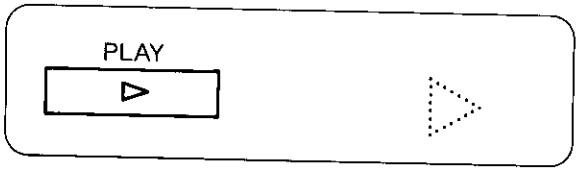
- When the Image Selector is set to "EDIT", the picture sharpness cannot be adjusted with the Picture Sharpness Control.





① Normal Playback

Press the Play Button (▶).

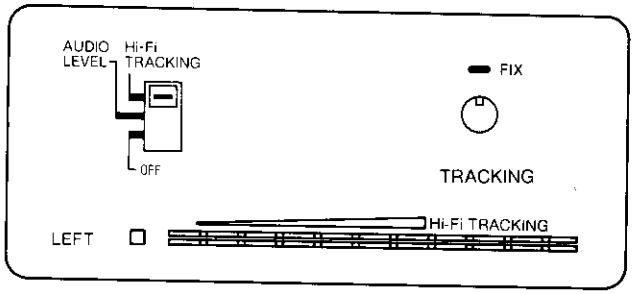


- Adjust the Tracking Control on the VTR if the image is partially obscured by bands of noise.
- Control the picture as you like with the Picture Sharpness Control (sharp or soft contours).

The format that was used for recording of the tape (VHS or S-VHS) is automatically detected and selected for playback.

② Adjustment of the Hi-Fi Audio Tracking

This adjustment may be necessary when playing back a tape which was recorded on another hi-fi VTR.
Set the Audio Level Meter Selector to "Hi-Fi Tracking" and slowly adjust the Tracking Control while observing the Audio Level Meter, for highest possible meter indication.

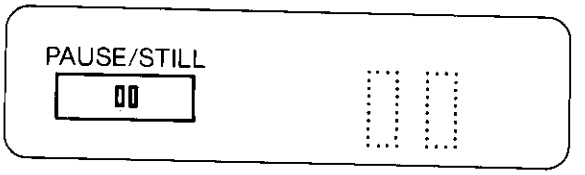


③ To Finish Playback

Press the Stop Button (■) to stop the playback.

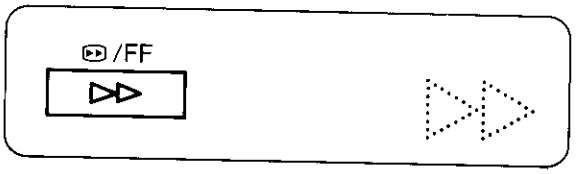
④ Super Still Playback

When the VTR is in the playback mode, press the Pause/Still Button (❚❚) to view a still-picture. To continue the normal playback, press this button again.



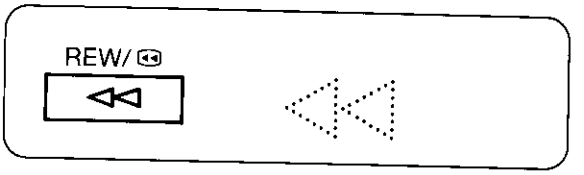
⑤ Cue Playback

When the Fast Forward ▶▶/Cue ⏩ Button is kept pressed while the VTR is in the playback mode, the tape will be played back at high speed in forward direction.



⑥ Review Playback

When the Rewind ◀◀/Review ⏪ Button is kept pressed while the VTR is in the playback mode, the tape will be played back at high speed in reverse direction.

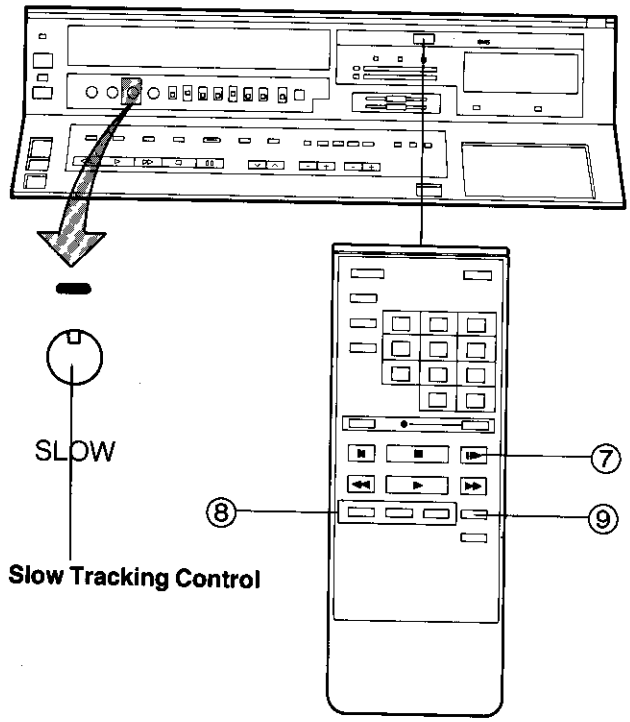


To make possible Cue or Review playback without having to keep the respective button pressed, first press the Memory/Search Button so that the Search Indicator "S" appears in the Multi-Function Display, and then press the Fast Forward ▶▶/Cue ⏩ Button or the Rewind ◀◀/Review ⏪ Button.
To switch the VTR back to normal playback, press the Play Button (▶).

- When Cue or Review playback continues for more than 10minutes, the VTR will automatically switch back to the normal playback mode.

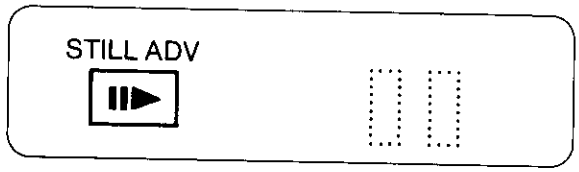
NV-FS1EA only
When playing back off-air recordings of mono TV Programmes, the Audio Playback Mode Indicators will light up, this is only to confirm that the sound is being reproduced from the hi-fi audio tracks and does not infer that the recording is necessarily in stereo.

PLAYBACK BY USING THE REMOTE CONTROLLER



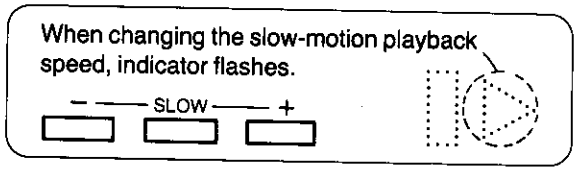
⑦ Super Still Advance Playback

Press the Still Advance Button (II▶) while the VTR is in the still playback mode. Each time you press this button, the still-picture will advance one single field.



⑧ Super Fine Slow Playback

During normal playback, the Slow-motion playback can be activated by pressing the Slow Button. The slow-motion playback speed can then be varied by using the Slow "+" or "−" Button.



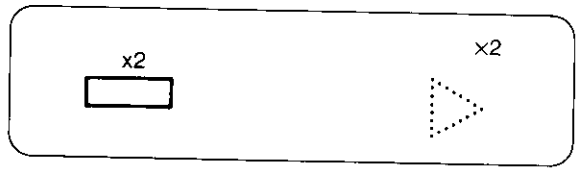
- Press the Play Button (▶) to continue the normal playback.
- If the Slow playback operation continues for more than 5 minutes, the VTR automatically switches over to the stop mode.
- While playing back a tape in the Super Still or Super Fine Slow playback mode on a TV set equipped with an automatic vertical hold control, the picture may shake vertically. In this case, set the TV set's vertical hold (Auto/Manual) selector to the "Manual" position, and adjust the vertical hold control.

Slow Tracking Control

- When noise bars appear during Super Still, Super Still Advance or Super Fine Slow playback, switch over to slow playback and adjust the Slow tracking Control to reduce the noise bars.
- It may not be possible to eliminate the noise bars completely.

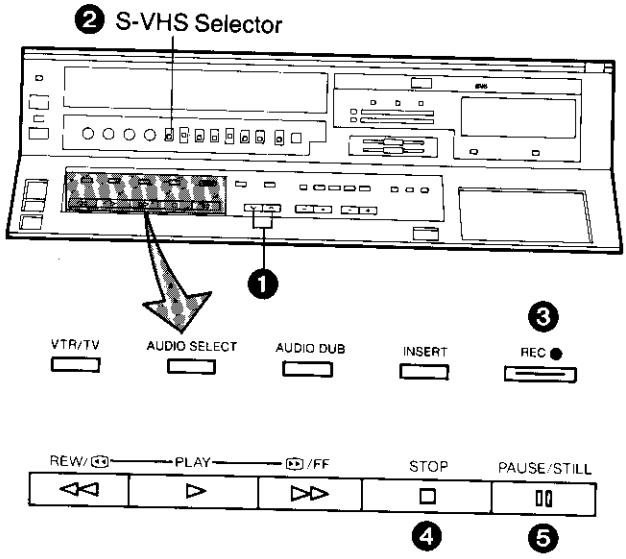
⑨ Double Speed Playback

When the VTR is in the playback mode, press the Double Speed Playback Button to view the action at twice the normal playback speed. To change back to normal playback, press the Play Button.



- The sound will be played back only during normal playback.
- If you leave the VTR in the still playback mode for more than 5 minutes, the VTR will automatically switch over to the Stop mode to protect the tape and the video heads.
- Noise which takes the form of horizontal bars appears on the TV in the Cue and Review playback modes. This is not an indication of a malfunction.
- The top of the picture may become distorted in the Cue, Review or Super Still (LP) mode. This is not an indication of a malfunction.
- When the picture rolls vertically in the Cue or Review mode, adjust the vertical hold control on the TV set.
- Immediately after starting Cue or Review playback, the picture may be distorted. Also, when these modes are cancelled, some momentary picture distortion may occur. However, this is not due to any malfunction.
- In "LP" mode only:
  1. During any playback mode other than normal playback, the picture may have some noise bars, the colour may be unstable, or a black and white picture may appear.
  2. When playing back a tape which was recorded on another VTR, it may be necessary to adjust the Tracking Control. In some cases the picture quality may still be inferior. This is due to limitation of format.

RECORDING FROM A TV BROADCAST SIGNAL



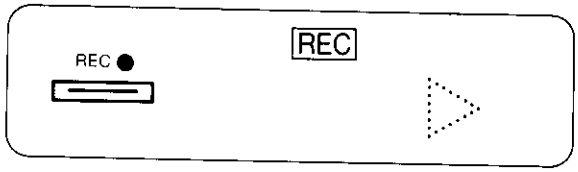
Preparation

- Make sure that the Timer Record Function is set to "Off".
- Reset the Tape Counter to "0:00.00".
- Insert a video cassette with the erasure prevention tab intact.
  When a video cassette is already inside the VTR, press the VTR On/Off Switch to turn it on.
- Set the Input Signal Selector to "Tuner".
- Set the Audio Rec Level Control Selector to "AGC".
- Set the Tape Speed Selector to "SP" or "LP".
- Press the VTR/TV Selector to "VTR" position.

❶ Select on the VTR, the programme position (channel) to be recorded. In order to confirm proper reception, turn on the TV set and select the video playback channel.

❷ Set the S-VHS Selector to "AUTO".
AUTO: S-VHS cassette tape are automatically recorded in the S-VHS format and VHS cassette tapes are automatically recorded in the VHS format.
OFF: To make a recording in the VHS format on an S-VHS cassette tape.

❸ Press the Record Button (●).



When a video cassette with broken out tab is inserted, it will be ejected automatically.

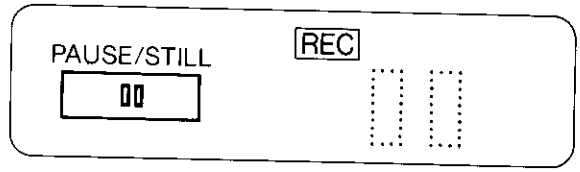
- During recording, the programme position (channel) on the VTR cannot be changed.
- To start a recording with the Remote Controller, press the two Record Buttons on the Remote Controller simultaneously.

To Finish the Recording

❹ Press the Stop Button (■).

If You Wish to Avoid Recording Unwanted Material

❺ Press the Pause/Still Button (❚❚) to stop the tape temporarily.



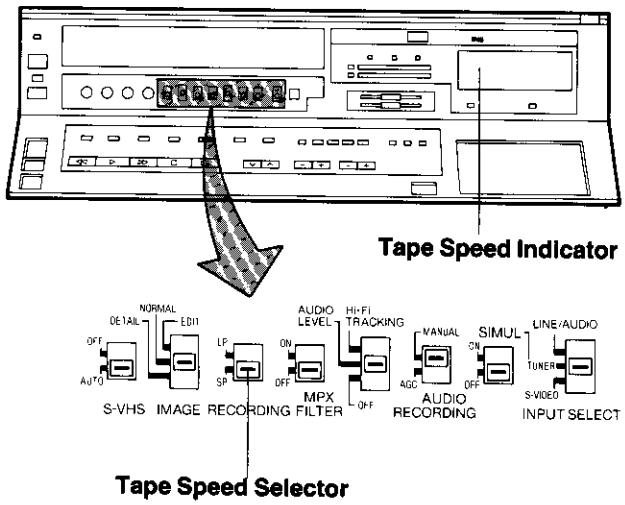
- Press the Pause/Still Button (❚❚) again to continue the recording.
- If you leave the VTR in the pause mode for more than 5 minutes, the VTR will automatically switch over to the stop mode to protect the tape and the video heads.

Recording One TV Programme While Watching Another

1. Record (following steps ❶–❸).
2. Press the VTR/TV Selector to "TV" position.
3. Select the desired programme position (channel) on your TV set.

- If the Stop Button is pressed to stop a recording, there may be a small gap between the previous recording and the subsequent recording on the same tape.

RECORDING FROM A TV BROADCAST SIGNAL (CONT'D)



Tape Speed Selector

For recording either of two tape speeds can be selected. During playback the recorder selects automatically the correct speed.

Select the desired tape speed with the Tape Speed Selector before recording.

- Set to the "SP" position for normal speed.
- Set to the "LP" position for slow speed.

The corresponding indicator (SP or LP) lights up during recording and playback in the Multi-Function Display.

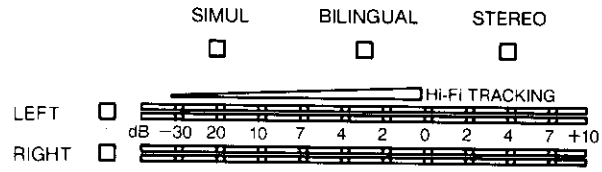
It is not recommended to change from the SP to the LP mode or vice versa in the middle of recording. Even if the switching is done while the VTR is in the pause mode, picture distortion will occur at the switching point during playback.

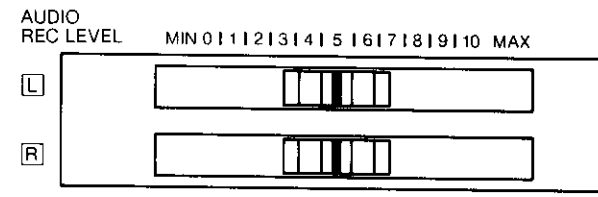
Manual Adjustment of the Audio Recording Level

Manual adjustment of the Audio recording level may be desirable when using the VTR as a hi-fi audio recorder or when producing your own video tapes.

- Set the Audio Level Meter Selector to "Audio Level" and Audio Rec Level Control Selector to "Manual" and adjust the recording volume with the Audio Rec Level Controls, while observing the Audio Level Meters. The recording level for the right and left channel can be adjusted individually.

(It is recommended to adjust so that peaks in the audio level reach about 4 dB.)

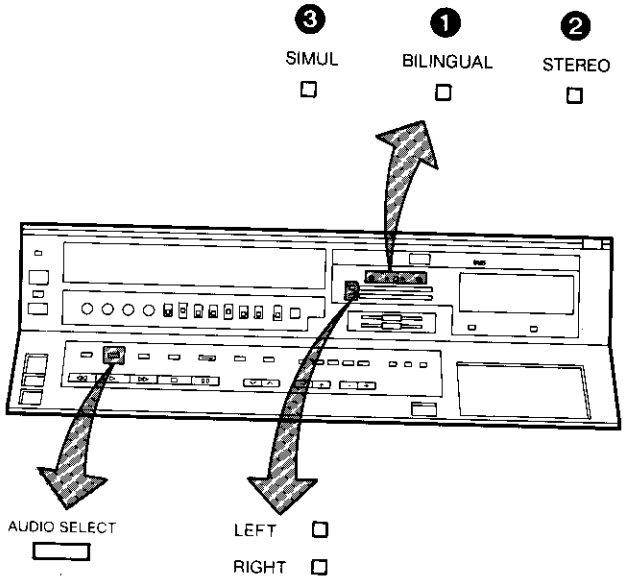




- For all Timer Recordings and also for normal recordings of TV programmes, the Audio Rec Level Control Selector is usually set to "AGC" for automatic adjustment of the audio recording level.
- When the Input Signal Selector is set to "Line/Audio", the level of the sound to be recorded on the hi-fi audio tracks and the normal audio track can be manually adjusted together.

  When this selector is set to "Tuner", manual adjustment of the audio recording level is only possible for the sound which is to be recorded on the hi-fi audio tracks. The sound to be recorded on the "Normal" audio track will be adjusted automatically.

HI-FI AUDIO SYSTEM



Recording of Stereo and Bilingual Sound (For model NV-FS1A only)

There is no special operation required; it is the same as for normal TV programme recording described on page 19. Recording of stereo and bilingual programmes is controlled automatically. It is not necessary to preselect any audio tracks.

❶ When a bilingual programme is received, the "Bilingual" indicator lights up.

❷ When a stereo programme is received, the "Stereo" indicator lights up.

Recording of Simulcast Sound

Preparation

- Connect your VTR to the Stereo Amplifier and FM Stereo Tuner as described on page 22.
- Tune the FM Stereo Tuner to the desired station.
- Set the Input Signal Selector to "Tuner".

❸ Set the Simulcast Switch to "On" position.
The "Simul" indicator lights up.
- The operation procedure is the same as for normal recording; see "Recording from a TV broadcast signal" on page 19.

While this switch is in the "On" position, the sound portion of the TV broadcast signal will be recorded only on the "normal" sound track. And the stereo sound signal received via the FM tuner will be recorded on the hi-fi sound tracks.

Playback (or Monitoring during Recording)

Press the Audio Playback Mode Selector to select the desired sound mode.
At the every push of this button, the audio playback mode changes as follows:

→Stereo→Left→Right→Normal audio track

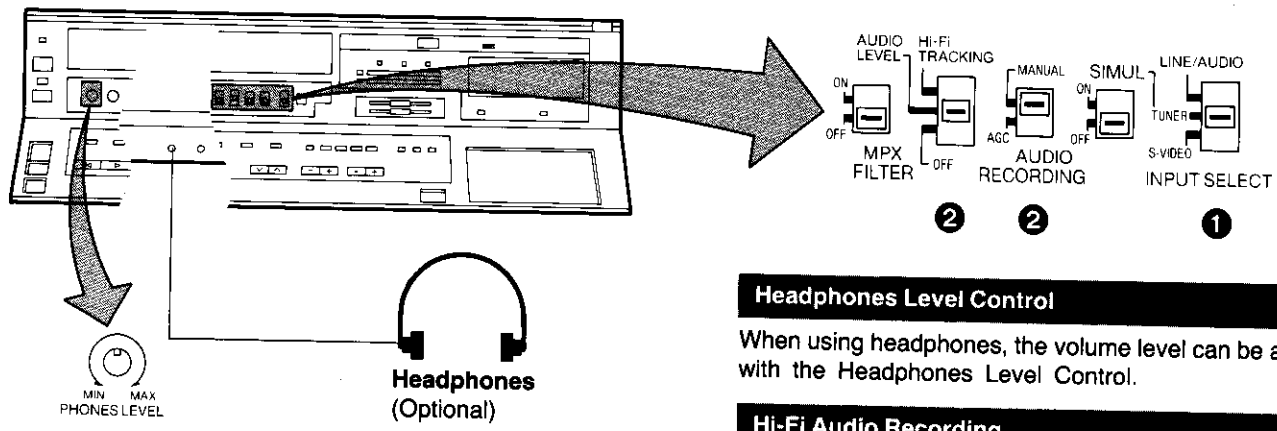
and the Left and Right Indicators show which sound mode is selected in the following way.

Stereo: Both the Left and Right Indicators are lit.
Left: The Left Indicator is lit.
Right: The Right Indicator is lit.
Normal: Both the Left and Right Indicators are not lit.

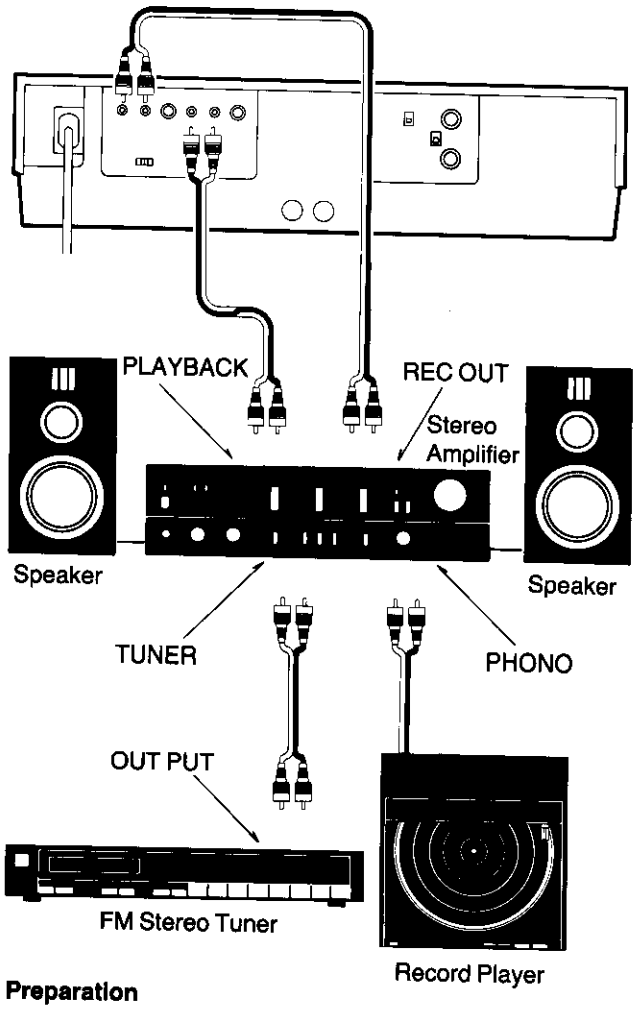
- The Audio Rec Level Control Selector must be set to "AGC", if no manual adjustment is to be carried out.
- If a video cassette recorded on this VTR with stereo or bilingual sound is played back on a conventional VHS video recorder, the sound will be reproduced from the normal audio track (in mono).
- If a video cassette recorded on a conventional VHS stereo video recorder is played back on this VTR, the sound reproduction of a stereo programme will be in mono. In case of a recorded bilingual programme, both language versions are reproduced mixed together (and are therefore not intelligible).

	Playback of Programmes Recorded on this VTR (or another VHS Hi-Fi Video Recorder)			**Playback of Programmes Recorded on a Conventional VHS Stereo Video Recorder**	
	Stereo Programmes	Bilingual Programmes	Mono Programmes	Stereo Programmes	Bilingual Programmes
STEREO	Left+Right Channels (Stereo)	CH1 from Left CH2 from Right	Mono	———	———
LEFT	Left Channel	Channel 1 (Main)	Mono	———	———
RIGHT	Right Channel	Channel 2 (Sub)	Mono	———	———
NORMAL	Mono	Channel 1 (Main)	Mono	Left+Right Mixed	CH1+CH2 Mixed

USING THE VTR AS A HI-FI AUDIO RECORDER



Headphones Output Level Control



Preparation

- Connect the VTR to the hi-fi audio system. (Example of a connection diagram is shown).
- Insert a video cassette with the erasure prevention tab intact.
  When a video cassette is already inside the VTR, press the VTR On/Off Switch to turn it on.
- Switch on the hi-fi audio system and select an audio source.
- For "Manual Adjustment of Audio Recording Level", see page 20.

Headphones Level Control

When using headphones, the volume level can be adjusted with the Headphones Level Control.

Hi-Fi Audio Recording

Note: Selection of an audio track is not necessary for recording.

❶ Set the Input Signal Selector to "Line/Audio".

❷ For automatic adjustment of the audio recording level, set the Audio Rec Level Control Selector to "AGC". Set the Audio Level Meter Selector to "Audio Level".

- To start the recording, press the Record Button (●).

❸ To achieve smooth transitions between adjoining recordings, see notes on page 34.

Hi-Fi Audio Playback

- Press (for playback of both mono and stereo recordings) the "Audio Playback Mode Selector Button" repeatedly so that the "Left" and "Right" Audio Playback mode Indicator light up.
- To start the playback, press the Play Button (▶).

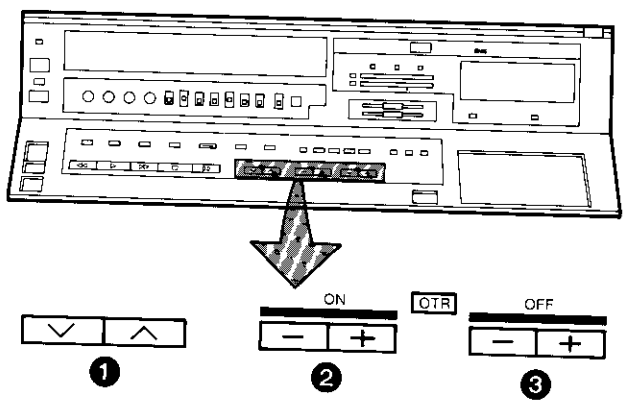
Adjustment of the Hi-Fi Audio Tracking

This adjustment may be necessary when playing back a tape which was recorded on another hi-fi VTR.
Set the Audio Level Meter Selector to "Hi-Fi Tracking" and slowly adjust the Tracking Control while observing the Audio Level Meter, for highest possible meter indication.

- If the sound is impaired by high frequency distortion when recording from an FM tuner, set the MPX Filter switch to "On". If there is no distortion when recording from an FM tuner, and for all other recordings, set this switch to "Off".

SUPER OTR FUNCTION (ONE-TOUCH TIMER RECORDING)

This convenient function makes it possible to easily programme the VTR for recording of TV programmes with immediate start or with start within 24 hours by precisely setting the starting time and ending time to the desired minute, and the VTR will automatically turn itself off when the recording ends.



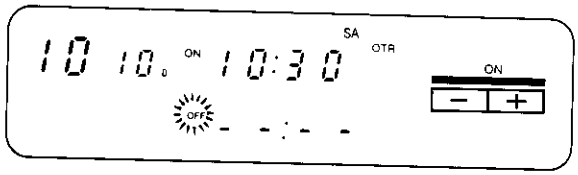
Preparation

- Make sure that the clock shows the present time correctly.
- Insert a video cassette with the erasure prevention tab intact.
  When a video cassette is already inside the VTR, press the VTR On/Off Switch to turn it on.
- Set the Input Signal Selector to "Tuner".
- Set the Audio Rec Level Control Selector to "AGC".
- Set the Tape Speed Selector to "SP" or "LP".
- Press the VTR/TV Selector to "VTR" position.

It is possible to programme an OTR recording for a TV programme which will start immediately or within the next 24 hours.
(For example, OTR recording of a TV programme broadcast from 10:30 to 11:00.)

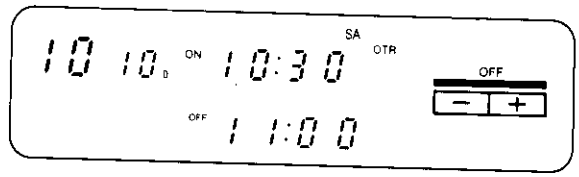
❶ Select the programme position (channel) to be recorded.

❷ Press the OTR On (+) or (−) Button to set the OTR starting time to 10:30.



- The "OTR" indicator will be displayed.

❸ Press the OTR Off (+) or (−) Button to set the OTR ending time to 11:00.



When a video cassette with broken out tab is inserted, it will be ejected automatically.

- When quickly and repeatedly pressing the OTR On (+) or (−) Button or the OTR Off (+) or (−) Button, the corresponding time indication changes in 1-minute steps. When it is kept pressed, the indication changes in 10-minute steps.
- After setting the OTR starting time in step ❷, the OTR Off (+) or (−) Button must be pressed within 8 seconds to select the OTR ending time, otherwise the selected starting time will be cancelled.
- The VTR will automatically switch off, when the OTR is completed. To turn the VTR on again, press the VTR On/Off Switch.

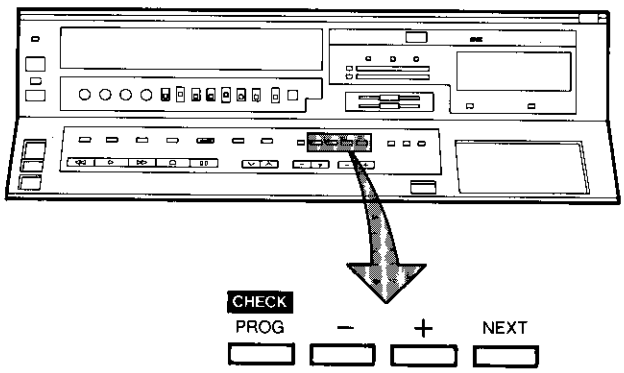
OTR Function with Immediate Start

Perform the operation steps ❶ and ❸.

- When the tape reaches its end during an OTR the VTR will turn itself off.
- Make sure that the OTR Function (One-Touch Timer Recording) does not overlap a programmed timer recording. An OTR always takes precedence over a timer recording.
- If you want to confirm the present time or the tape counter position before the programmed OTR is performed, or to check the tape counter position during the OTR, press the Check/Programme Button. To return the display to the previous indication, press this button once more.
- It is possible to change the OTR starting time or the ending time before the recording starts.
- It is possible to perform any VTR operation (except timer recording) until the recording starts.
- It is possible to change the OTR ending time even during the recording.
- To interrupt an OTR, press the VTR On/Off Switch to turn the VTR off.

TIMER RECORDING

Programming of as many as 8 timer recordings is possible up to one month in advance.



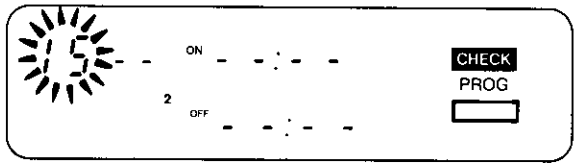
Preparation

- Make sure that the clock shows the present time correctly.
- Make sure that the Timer Record Function is set to "Off".
- Set the Input Signal Selector to "Tuner".
- Insert a video cassette with the erasure prevention tab intact.
  When a video cassette is already inside the VTR, press the VTR On/Off Switch to turn it on.
- Set the Audio Rec Level Control Selector to "AGC".
- Set the Tape Speed Selector to "SP" or "LP".
- Press the VTR/TV Selector to "VTR" position.

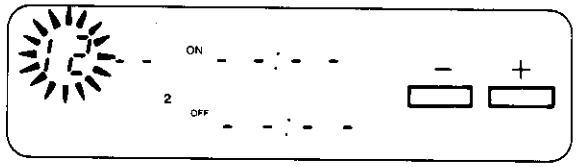
For Example:

Programming a timer recording for a TV programme that will be broadcast on Wednesday, October 27, from 10:30 to 11:45, on programme position (channel) 12, on timer programme number 2. (Present date=October 10, 1999)

❶ Press the Check/Programme Button to select the next unoccupied timer programme number.

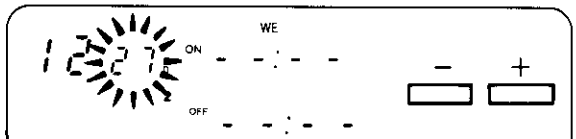


❷ Press the (+) or (–) Button to select the programme position (channel) on which the TV programme will be broadcast.



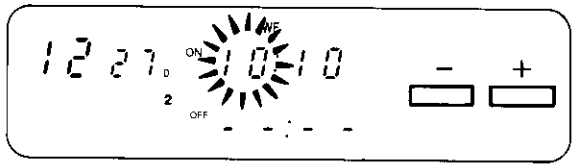
❸ Press the Next Button.

❹ Press the (+) or (–) Button to set the date.



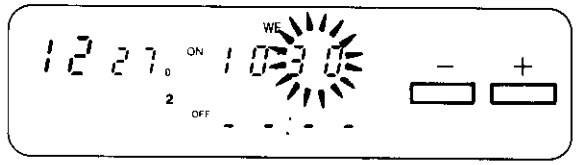
❺ Press the Next Button.

❻ Press the (+) or (–) Button to select the hour of the starting time of the TV programme.



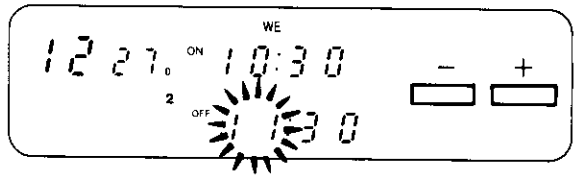
❼ Press the Next Button.

❽ Press the (+) or (–) Button to select the minute of the starting time of the TV programme.



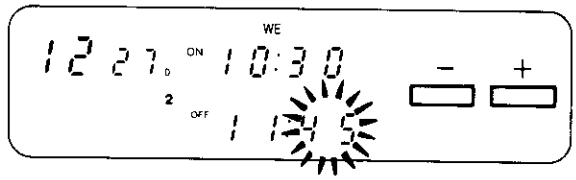
❾ Press the Next Button.

❿ Press the (+) or (–) Button to select the hour of the end time of the TV programme.

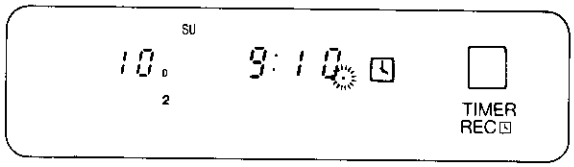


⓫ Press the Next Button.

⓬ Press the (+) or (–) Button to select the minute of the end time of the TV programme.



⓭ Press the Timer Record Button.

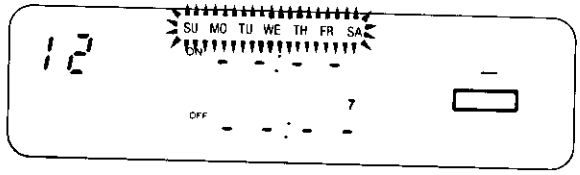


For Everyday Recording

For example:
Programme time for timer recording every day from 10:30 to 11:45 on timer programme number 7.
Programming for everyday recording can be made on any of the timer programme numbers 1–7.

Execute the operation steps ❶ to ❸.

❹ Press the (−) Button once, so that all day indications will appear together.

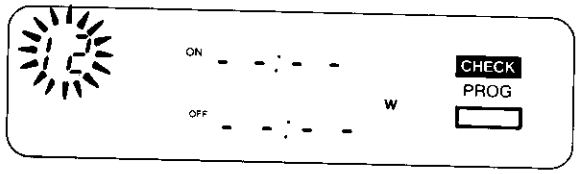


Perform the operation steps ❺ to ⓭.

For Everyweek Recording

For Example:
Programming a timer recording for a TV programme that is broadcast every week on Sunday, from 10:30 to 11:45.

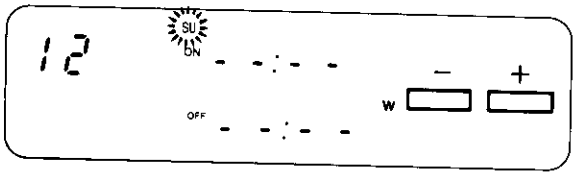
① Press the Check/Programme Button until "W" is displayed.



② Press the (+) or (−) Button to select the programme position (channel) on which the TV programme will be broadcast.

③ Press the Next Button.

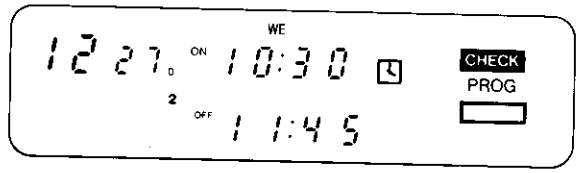
④ Press the (+) or (−) Button to select the day of the week, on which the programme will be broadcast.



Perform the operation steps ❺ to ⓭.

To Confirm the Programme of a Timer Recording

Make sure that the VTR is turned on.
Make sure that the Timer Record Function is set to "On".
Select the programme number to be checked, by repeatedly pressing the Check/Programme Button.
The preset channel and start and ending times of the timer recording will be indicated for about 8 seconds.
When the Timer Record Function is set to "Off", they will be indicated for about 25 seconds.



To Cancel a Timer Recording

Make sure that:
the VTR is turned on,
the Timer Record Function is set to "Off".

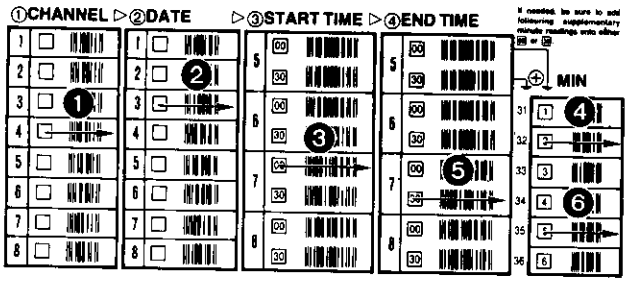
❶ Press the Check/Programme Button repeatedly, until the number of the timer programme that you want to cancel is displayed.

❷ Press the (+) and (−) Button simultaneously for more than 3 seconds.

- It is impossible to confirm programmes of timer recordings while an OTR is being performed.
- To turn the VTR on and use it for playback or recording before the timer recording is performed, set the Timer Record Function to "Off".
- When the Timer Record Function is set to "On" but no video cassette is inserted or no timer recording has been programmed, the Timer Recording Indicator ⏲ will flash to inform that the timer recording cannot be performed.
- After the programmed timer recording has been made, set the Timer Record Function to "Off", otherwise the VTR cannot be operated normally.
- During recording, the programme position (channel) on the VTR cannot be changed.
- When you want to watch TV after setting a timer recording, select the desired channel on the TV set.
- To cancel a timer recording during recording, set the Timer Record Function to "Off".

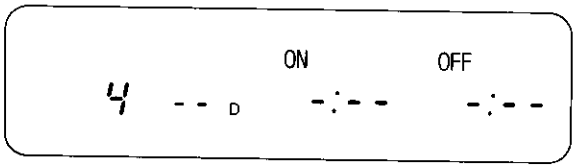
TIMER RECORDING BY USING THE DIGITAL SCANNER

Tracing the Bar Codes

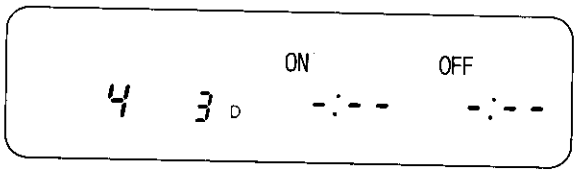


Example: When programming a timer recording for a programme that will be broadcast on channel position 4 on the 3rd of the month, from 7:02 to 7:35, trace the bar codes in the order of the numbered arrows shown below.

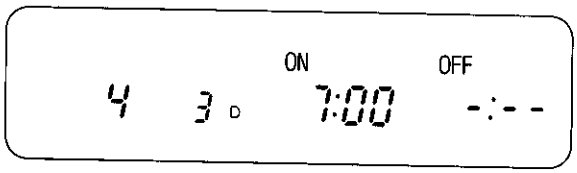
❶ Trace the bar code for "CHANNEL".



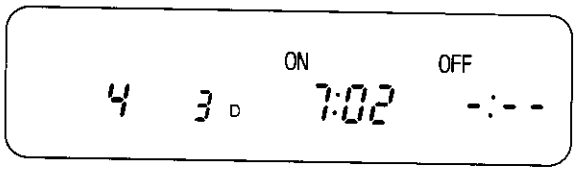
❷ Trace the bar code for "DATE".



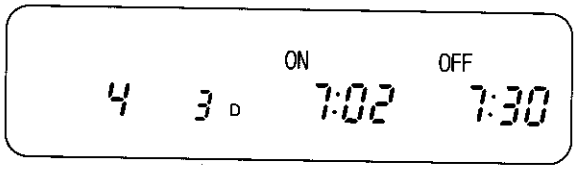
❸ Trace the bar code for "START TIME".



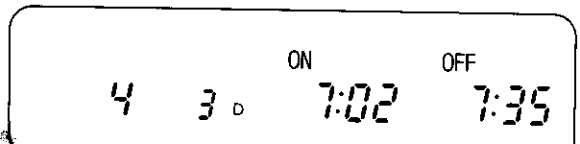
❹ Trace the bar code for "+MIN".



❺ Trace the bar code for "END TIME".



❻ Trace the bar code for "+MIN".



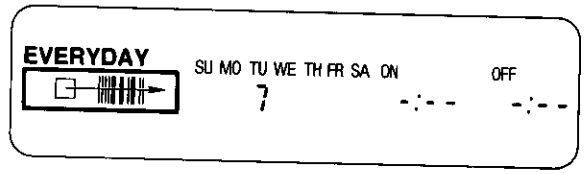
- When setting to a minute between 1 and 29, trace the appropriate "+MIN" bar code after tracing the 00 bar code.
- When setting to a minute between 31 and 59, trace the appropriate "+MIN" bar code after tracing the 30 bar code.

- The "Bee Bee Bee Bee Beeeeep" sound signals that the scanner is now ready for data transmission.
- When a timer bar code with 00 or 30 minutes is traced for the end time, the "Bee Bee Bee Bee Beeeeep" sound which indicates reading completion is heard. When subsequently tracing a "+MIN" bar code after tracing 00 or 30 to choose another minute setting, the reading completion sound will be heard again.
- When no sound is heard, read the bar codes once again.
- If more than one bar code is read in the same group, only the last code will be effective.
- The bar codes for the time from "0:00" (midnight) to "4:59" in the morning are on the back of the Programming Sheet.
- If the "CANCEL" bar code is read, all bar codes that have been read so far will be cancelled.

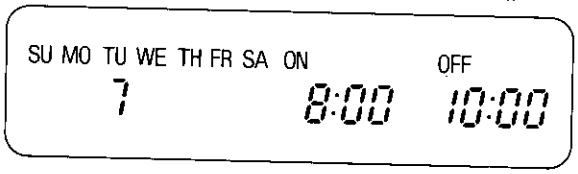
For Everyday Recording

① Turn on the Digital Scanner and trace the "CHANNEL" bar code.

② Trace the "EVERYDAY" bar code.



③ Trace the "START TIME" and then the "END TIME" bar codes, and transmit the data to the VTR.

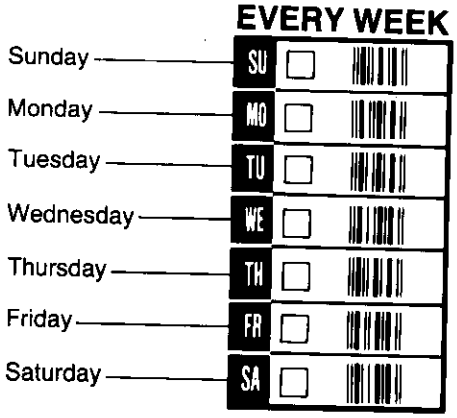


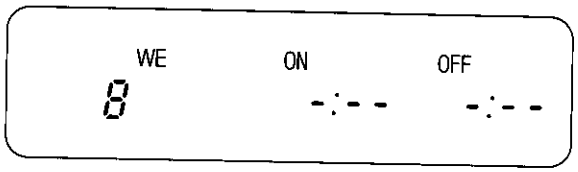
- Everyday recording will be performed from that day on.
- If a "DATE" bar code is traced after tracing the "EVERYDAY" bar code, everyday recording will not be performed.

For Everyweek Recording

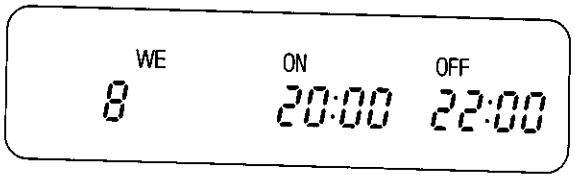
① Turn on the Digital Scanner and trace the "CHANNEL" bar code.

② Trace the bar code for the desired day of the week among the "EVERYWEEK" bar codes.





③ Trace the "START TIME" and then the "END TIME" bar codes, and transmit the data to the VTR.

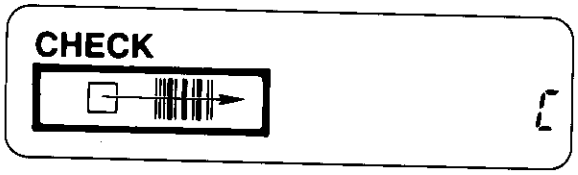


- Everyweek recording will be performed from that week on.
- If a "DATE" bar code is traced after tracing the "EVERY-WEEK" bar code, everyweek recording will not be performed.

To Confirm the Programme of a Timer Recording

To perform this operation, the VTR must be turned on or it must be in the timer recording standby mode (◳ indication is lit).

❶ Trace the "CHECK" bar code.



❷ Perform transmission.
- After releasing the Transmit Button, the programmed data will be displayed for about 8 seconds (for about 25 seconds, if the ◳ indication is not lit) on the Multi-Function Display.
- At every push of the Transmit Button, the timer programme number advances to the next higher number.

To Cancel a Programmed Timer Recording

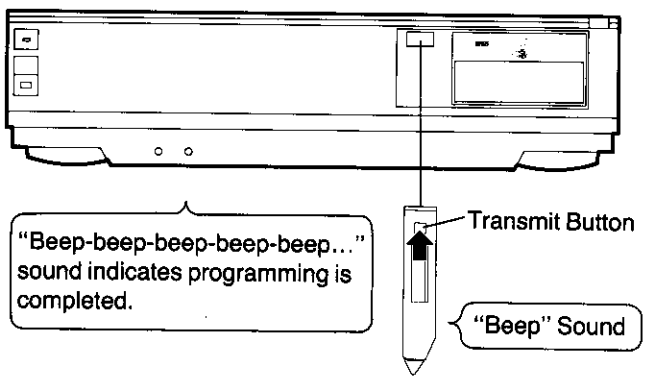
To perform this operation, the VTR must be turned on but not be in any of the recording or playback operation modes, or it must be in the timer recording standby mode (◳ indication is lit). To cancel a programmed timer recording, its data must be displayed on the Multi-Function Display. If they are no longer displayed, first, trace the "CHECK" bar code and perform transmission (several times, if necessary, until the programme you want to cancel is displayed). Then, within 8 seconds (within 25 seconds, if the ◳ indication is not lit):

① Trace the "CANCEL" bar code.

② Perform transmission.
- To programme a new timer recording, perform the programming from the beginning.

Transmit the Programming Data

Keep pressing the Transmit Button and confirm that the programmed data on the Multi-Function Display of the VTR are as desired.
After releasing the button, the data will continue to be displayed for about 12 seconds.

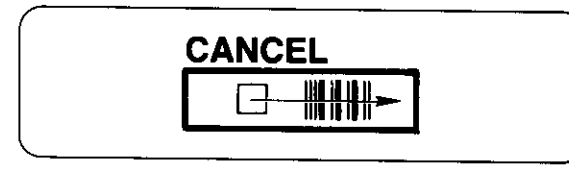


- If the transmission was not received correctly, the "Beep-Beep, Beep-Beep" sound from the VTR will warn you. In this case, perform transmission again.
- The transmission is possible when the VTR is turned on but is not in any of the recording or playback operation modes. It is also possible when the VTR is in the timer recording standby mode (◳ indication is lit).
- The programming will be done on the next lower unoccupied timer programme number (7~1).
- If all programme numbers are occupied, the "Beep-Beep, Beep-Beep" sound from the VTR will warn you that the programming cannot be made.
- When the Transmit Button is pressed, the VTR will automatically be put into the timer recording standby condition and the VTR will be turned off.
- To operate the VTR before the timer recording will be performed, press the Timer Rec. Button to suspend the timer recording standby condition. After using the VTR, be sure to press the Timer Rec. Button again, otherwise the timer recording will not be made.

For Programming More Than One Timer Recording in Succession

Repeat the following operation steps ❶–❸.

❶ Trace the "CANCEL" bar code on the Programming Sheet.

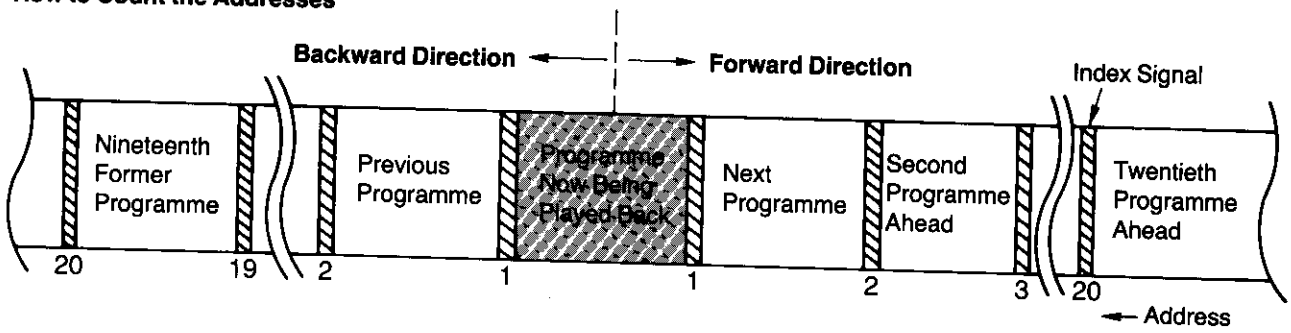


❷ Trace the bar codes for "CHANNEL", "DATE", "START TIME" and "END TIME".

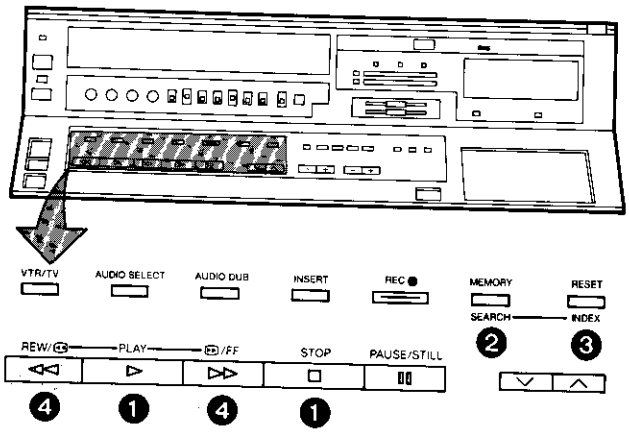
❸ Confirm that the present time is displayed on the Multi-Function Display of the VTR, and transmit the data.
- If the next timer programming data are transmitted while the previous timer programming data are still being displayed, the displayed timer recording data will be cancelled.

VHS INDEX SEARCH SYSTEM

How to Count the Addresses

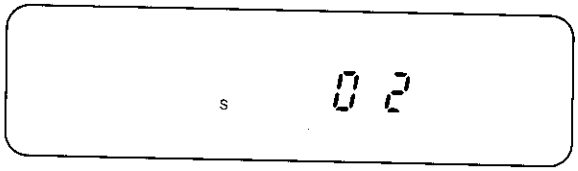


With the Index Search function, up to 20 addresses (places where an index signal is recorded) can be skipped to directly locate the beginning of the desired programme in forward or reverse direction in the Fast Forward or Rewind mode.



A special index signal (for use of the VHS Index Search function) is automatically recorded every time the Record Button is pressed. If you want to record an additional index signal during the recording of a programme, press the Record Button again at the desired point.

1. Press the Play Button (▶) or Stop Button (■).
2. Press the Memory/Search Button twice.
   - The indication "S" appears on the Multi-Function Display.
3. Repeatedly press the Reset/Index Button to select the desired address.
   The number of the selected address is shown on the Multi-Function Display.



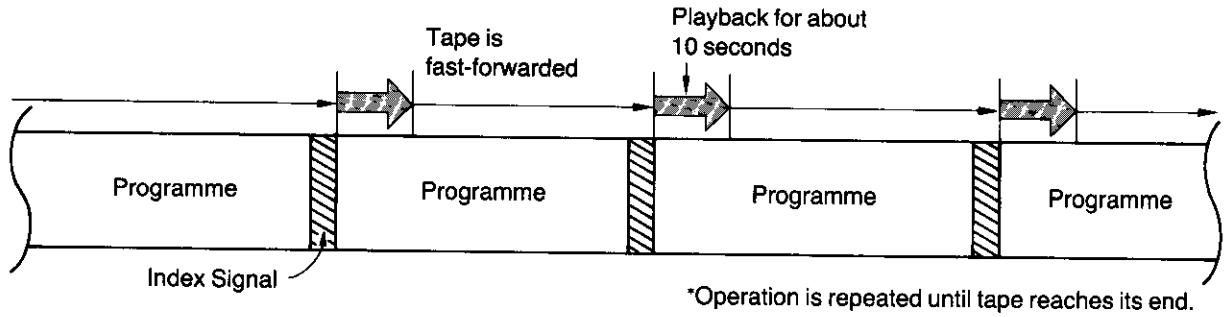
4. Press the Rewind ◀◀/Review ⏮ or Fast Forward ▶▶/Cue ⏭ Button to start the VHS Index Search function (the VTR will switch to the rewind or fast-forward mode).

- Every time an index signal (address) is skipped the number in the Address Indication decreases by one.
- When the preset address is reached, the Tape Counter Indication will appear in place of the Address Indication, and the normal playback will start.
- To abort the Index Search function midway, press the Play or the Stop Button.

- If the recording is stopped temporarily by pressing the Pause Button and is later resumed, no index signal will be recorded at that position.
- It is impossible to record only index signals onto a tape that has already been recorded.
- If a tape position without any recording is passed during the Index Search function, that position may be counted as an address.
- The Index Search function can only count the addresses correctly, if the index signals are spaced at least 2 minutes in the SP mode and 5 minutes in the LP mode.
- If the Index Search function is started extremely close to the beginning of the next programme (address) or from the beginning of the tape, the first address may not be counted.

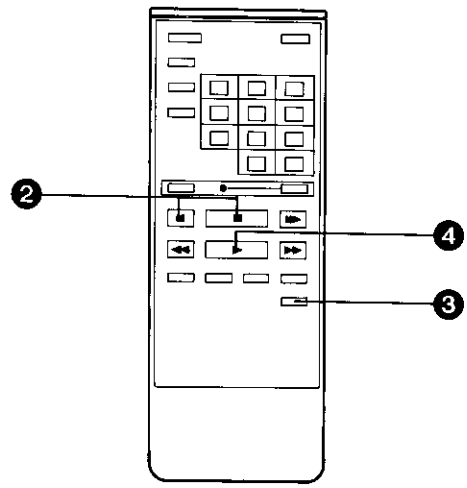
INTRO SCAN FUNCTION

How the Intro Scan Function Works...



The Intro Scan function plays back the first 10 seconds of each programme (recorded with index signal) on a tape one after another. This is convenient for quick checking what programmes are on a tape, or to find the desired instalment of a TV series you have recorded on a tape.

Convenient Intro Scan Operation with the Remote Controller



❶ Insert a video cassette on which index signals are recorded.

❷ Put the VTR in the stop mode or the still playback mode.

❸ Press the Intro Scan Button.
("S" mark will light up in the Multi-Function Display and the Intro Scan will start.)

❹ When the desired scene is reached, press the Play Button.

Intro Scan Operation on the VTR

① Insert a video cassette.
(Put the VTR in the stop mode.)

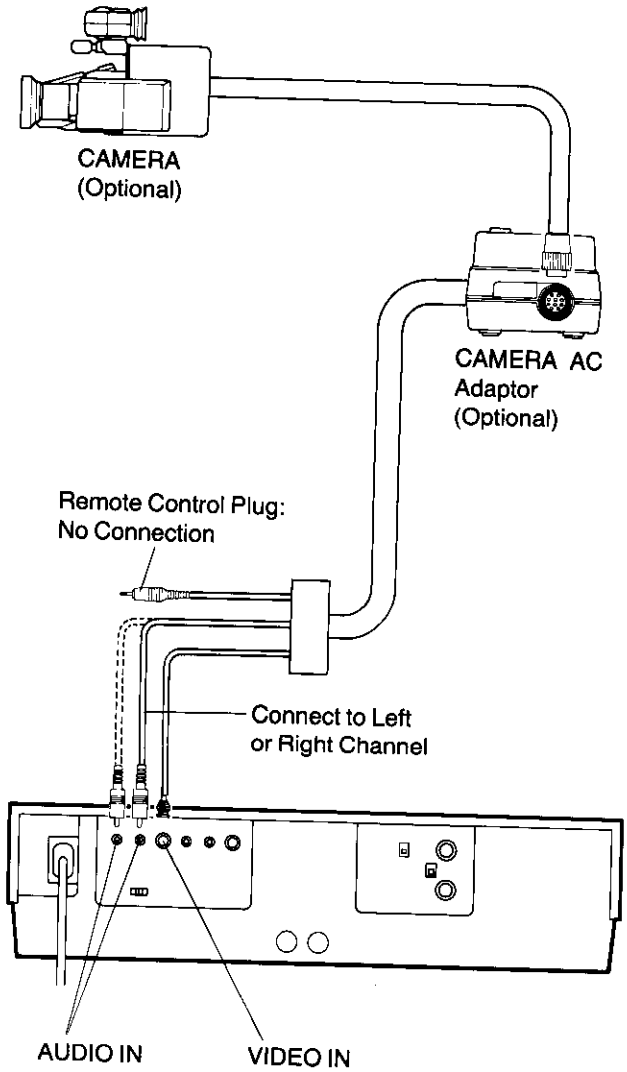
② Press the Memory/Search Button twice.
("S" mark appears.)

③ Press the Fast Forward ▶▶/Cue ⏩ Button.
(The Intro Scan starts.)

④ When the desired scene is reached, press the Play Button.

- The Intro Scan function may not be activated for the first programme recorded close to the beginning of the tape.
- During the Intro Scan, if there is a portion without any recording on the tape, the Intro Scan function will be activated at that position to play back the tape for about 10 seconds, and the Intro Scan will then continue.
- The Intro Scan function may not be activated, if the interval between programme starts is less than 5 minutes in the LP mode, or less than 2 minutes in the SP mode.
- If a portion without any recording on the tape continues for more than about 50 minutes in the SP mode, or more than about 90 minutes in the LP mode, the Intro Scan function will be cancelled and the playback will start.

CAMERA RECORDING



Preparation

- Connect the Video Camera via the Camera AC Adaptor to the VTR as shown in the illustration above.
- Set the Input Signal Selector to "Line/Audio".
- Insert a video cassette with the erasure prevention tab intact.
  When a video cassette is already inside the VTR, press the VTR On/Off Switch to turn it on.
- Set the Audio Rec Level Control Selector to "AGC".
- Set the Tape Speed Selector to "SP" or "LP".

1. Turn the Camera AC Adaptor on and make the necessary adjustments on the camera.
   Refer to the operating instructions of the camera you are using.
2. Press the Record Button (●) on the VTR to start recording.

Avoid recording unwanted material:
Press the Pause/Still Button (❚❚) of the VTR, and the recording will stop temporarily. To restart recording, press the Pause/Still Button (❚❚), again.

3. Press the Stop Button (■) on the VTR to stop the recording.

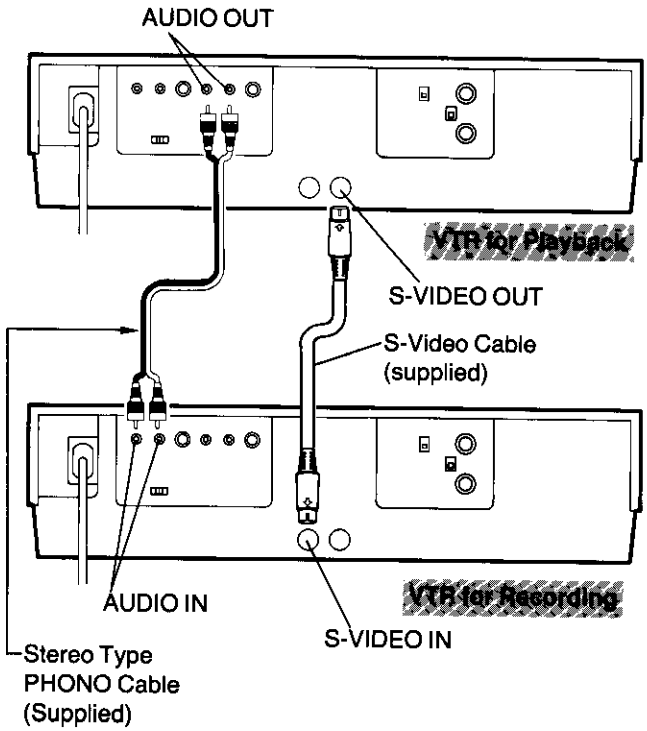
- For playback of a tape that was recorded via a camera, select the audio track on which the sound from the camera microphone was recorded by pressing the corresponding Audio Playback mode Selector Button.
- If you leave the VTR in the pause mode for more than 5 minutes, the VTR will stop automatically to protect the tape and the video heads.
- Even if the video camera is equipped with video recorder remote control functions, this VTR can not be remote-controlled from the camera.

DUBBING (COPYING)

Dubbing (copying) from one video cassette to another.

If the VTR to Be Connected is Equipped with S-Video Socket

Perform the connection with the supplied S-Video Cable. This connection makes possible editing with better picture quality.



Preparation

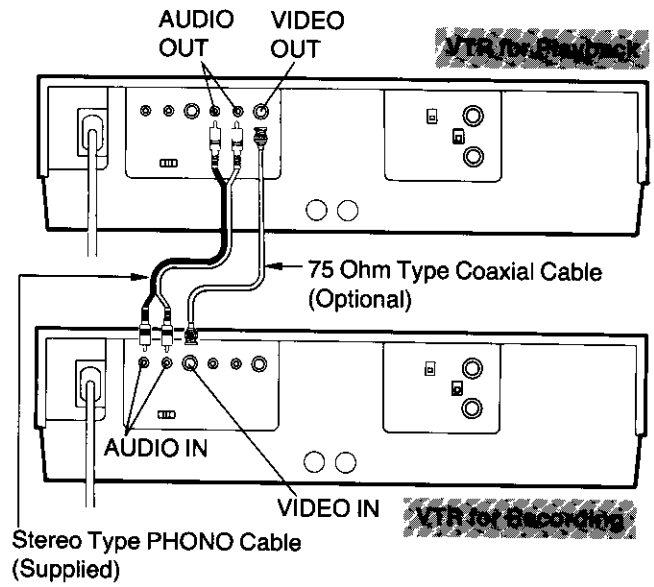
- Make the necessary connections as shown in the connection diagram.
- Press the VTR On/Off Switches to turn both VTRs on.
- Set the Input Signal Selector to "S-VIDEO". (Recording VTR)
- Set the Audio Rec Level Control Selector to "AGC". (Recording VTR)
- Make sure that the Image Selector of both the recording and playback VTRs (if equipped) are in the "Edit" position. This improves the picture quality when dubbing. Set these switches to "Normal" for ordinary use of the VTRs.
  (The Image Selector is on the front panel.)

❶ Place the recorded cassette in the playback VTR and a blank video cassette with the erasure prevention tab intact in the recording VTR.

❷ Press the Record Button (●) on the recording VTR.

❸ Press the Play Button (▶) on the playback VTR.

❹ Press the Stop Button (■) on both VTRs to stop the dubbing.



Preparation

- Make the necessary connections as shown in the connection diagram.
- Press the VTR On/Off Switches to turn both VTRs on.
- Set the Input Signal Selector to "Line/Audio". (Recording VTR)
- Set the Audio Rec Level Control Selector to "AGC". (Recording VTR)
- Make sure that the Image Selector of both the recording and playback VTRs (if equipped) are in the "Edit" position. Set these switches to "Normal" for ordinary use of the VTRs.
  (The Image Selector is on the front panel.)

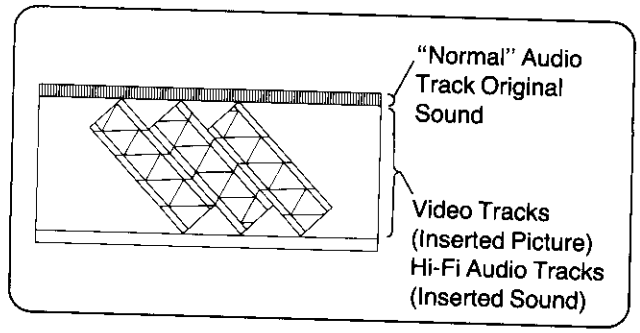
Execute the operation steps ❶ to ❹.

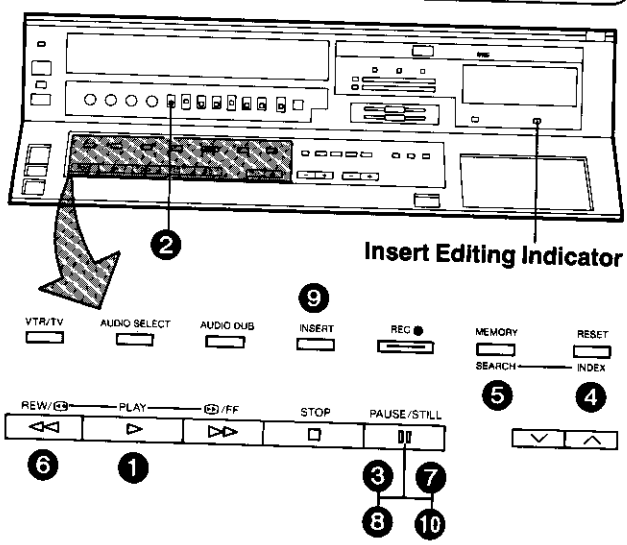
- To assure smooth, noiseless cuts when interrupting the recording, always use the Pause/Still Button (❚❚).
- To obtain smooth cuts when starting the recording from the stop mode:
  1. Play back the last part of the previously recorded material to confirm its ending point, and then press the Pause/Still Button (❚❚).
  2. Press the Record Button (●).
     (The VTR is still in the pause mode.)
  3. To start recording, press the Pause/Still Button (❚❚) again.
- The picture quality of a re-recorded tape is not as good as that of the original.

INSERT EDITING

When this type of editing is done, the picture and the sound are recorded on the tape as shown below. However, if no new sound is input, only the "normal" original sound remains on the tape because the original Hi-Fi sound will always be erased during insert editing.

Video and Audio Track Recording Pattern





Preparation

- Select the video playback channel on the TV set.
- Insert a video cassette with the erasure prevention tab intact.
- When performing insert editing from another VTR, set the Image Selector to "EDIT".
- Set the Input Signal Selector according to the type of Insert Editing to be performed.

"LINE/AUDIO": When inserting picture and sound from equipment connected to the Video Input Socket and the Audio Input Sockets on the rear of this VTR.

"TUNER": When inserting scenes from a TV programme.

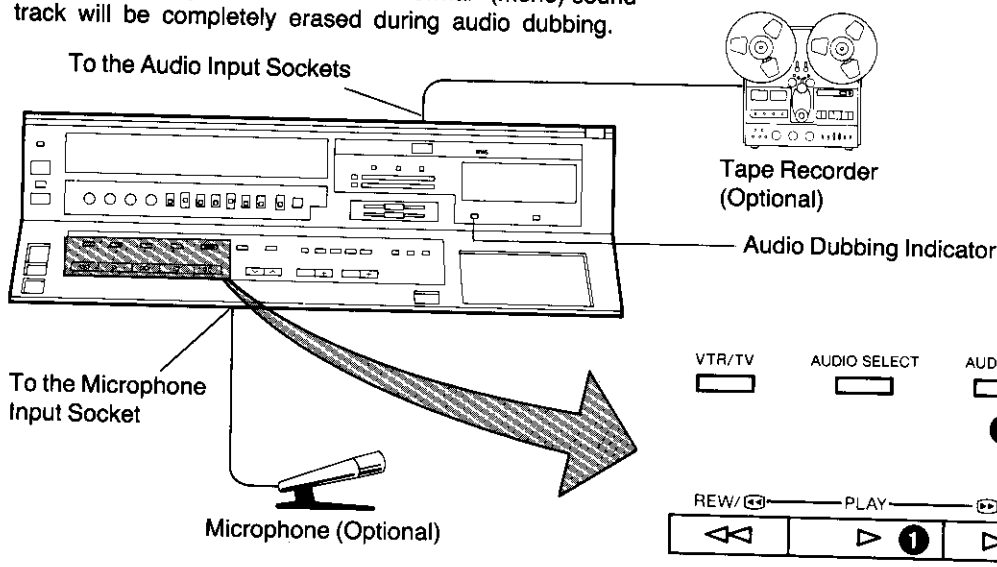
"S-VIDEO": When inserting picture and sound from equipment connected to the S-Video Input Socket and the Audio Input Sockets on the rear of this VTR.

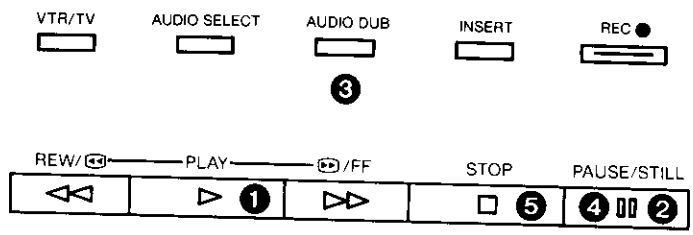
1. Press the Play Button.
2. Set the S-VHS Selector according to the S-VHS Indicator.
   When the S-VHS Indicator is
   lit ..... Set to "AUTO".
   not lit ..... Set to "OFF".
3. Locate the tape position where you want the insert editing to end, and press the Pause/Still Button at that position to put the VTR into the still playback mode.
4. Press the Reset Button to reset the Tape Counter to "0:00.00".
5. Press the Memory/Search Button so that the Memory Indicator "M" mark will appear.
6. Keep the Rewind/Review Button pressed for reverse playback at high speed and release the button when the scene, where the insert editing is to start, has been passed.
7. Press the Pause/Still Button to start playback, and locate the point where the insert editing is to start.
8. Press the Pause/Still Button at the insert editing start point to put the VTR into the still playback mode.
9. Press the Insert Editing Button.
   (The Insert Editing Indicator lights up.)
10. When the source VTR, from which the picture is to be inserted, is ready, press the Pause/Still Button to start the insert editing.
    - The insert editing will end at the point where the Tape Counter becomes "0:00.00", and the editing VTR will stop in the still playback mode.

- It is not necessary to operate the Tape Speed Selector.
- The picture quality of an inserted part is always somewhat inferior to that of the original.
- Avoid performing insert editing repeatedly on the same part of the tape because the picture quality of that part becomes inferior.
- Do not press the Memory/Search Button during insert editing. If it is pressed, the Memory Indication "M" will disappear, and the insert editing will not end automatically at the preset editing end point.
- If the Stop Button is pressed on the editing VTR to finish the insert editing, noise bars will later be visible at that position of the tape.
- The inserted picture may contain slight colour noise or colours may be unstable.

AUDIO DUBBING

Note that the original sound on the "normal" (mono) sound track will be completely erased during audio dubbing.





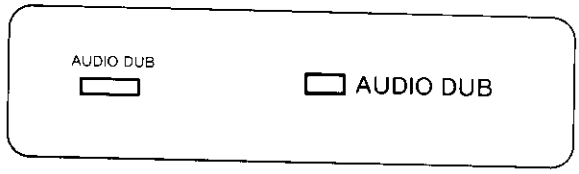
Preparation

- Set the Input Signal Selector to "Line/Audio".
- Insert a video cassette with the erasure prevention tab intact.
  When a video cassette is already inside the VTR, press the VTR On/Off Switch to turn it on.
- Reset the Tape Counter to "0:00.00".
- Turn the TV set on and select the video playback channel.
- Set the Audio Rec Level Control Selector to "AGC".
- Select the "normal" (mono) sound track by repeatedly pressing the Audio Playback Mode Selector until the Audio Playback Mode Indicators "Left" and "Right" are not lit.

❶ Press the Play Button (▶) to look for the point where you want to start the audio dubbing.

❷ Press the Pause/Still Button (❚❚) at the exact point where you want to start the audio dubbing.

❸ Press the Audio Dubbing Button (the indicator will light up).



❹ Press the Pause/Still Button (❚❚) once again to release the tape from pause, and at the same time start the operation of the audio source. The audio dubbing will start.

❺ Press the Stop Button (■) to stop the audio dubbing.

- Sound recorded by using the audio dubbing function is recorded on the "normal" audio track (always in mono).
- For playback, select the "normal" (mono) sound track by repeatedly pressing the Audio Playback Mode Selector until the Audio Playback Mode Indicators "Left" and "Right" are not lit.
- When a microphone is used for dubbing, do not place it near the speaker of your TV to prevent howling noise (acoustic feedback).
- If the erasure prevention tab of the cassette is missing, no audio dubbing can be made.

BEFORE REQUESTING SERVICE

Before requesting service, check the following points once again.

SYMPTOM	CAUSE	REMEDY
Power doesn't turn on.	Mains lead is not connected.	Connect mains lead to mains outlet.
	The Timer Record Function is set to "On".	Set the Timer Record Function to "Off".
Power is on but unit doesn't operate.	Dew condensation inside the VTR.	Wait until the Dew Indicator "$\mathcal{d}$" goes off.
	Safety devices are operating.	Turn off the VTR On/Off Switch, disconnect mains cord from outlet, then reconnect mains cord to mains outlet and turn on the VTR On/Off Switch again.
TV programmes cannot be recorded.	Connection of aerial lead is not correct.	Connect aerial lead correctly.
	Reception channel is not properly tuned.	Tune reception channel.
	The Input Signal Selector is not set correctly.	Set the Input Signal Selector to "Tuner".
OTR Function (One-Touch Timer Recording) cannot be performed.	Clock is flashing "0:00".	Set clock to present time.
Unattended timer recording cannot be performed.	Recording start or recording stop time setting is incorrect.	Set recording start and recording stop time correctly.
	The Timer Record Function is set to "Off".	Set the Timer Record Function to "On".
	Clock shows incorrect time.	Adjust clock to present time.
	Clock is flashing at "0:00".	Set clock time and date, and perform timer setting.
	The Input Signal Selector is not set to "Tuner".	Set the Input Signal Selector to "Tuner".
If you attempt to carry out Recording, Timer Recording, or OTR, the cassette will be automatically ejected.	Accidental erasure prevention tab on the cassette is broken out.	Cover tab hole with adhesive tape.
Recording via external input terminals cannot be performed.	The Input Signal Selector is not set correctly.	Set the Input Signal Selector to "Line/Audio".
Recorded programmes with two-channel sound (stereo, bilingual or Simulcast) can not be played back.	Setting of the Audio Playback Mode Selector Button is not correct.	Press the Audio Playback Mode Selector Button to select the desired audio playback mode. (See page 21)
	Hi-Fi tracking is misaligned.	Precisely align the tracking of the hi-fi sound track.

BEFORE REQUESTING SERVICE (CONT'D)

SYMPTOM	CAUSE	REMEDY
Playback picture is not in colour. Playback picture has large amounts of "snow".	Reception channel was not adjusted correctly during recording.	Readjust reception channel correctly.
	TV set is not properly tuned to the video playback channel of the VTR.	Properly tune the TV set to the video playback channel of the VTR.
	The video heads are clogged with dirt.	Consult qualified service personnel.
	The video heads are abraded.	Consult qualified service personnel.
	Tape is old and/or defective.	Use new tape.
Remote Controller (Digital Scanner) does not work.	Remote Controller (Digital Scanner) is not being pointed at Infra-red Receiver Window on the VTR.	Point the Remote Controller (Digital Scanner) at Infra-red Receiver Window on the VTR.
	Distance is too far.	Use the Remote Controller within 7 m from the VTR.
	An obstacle is between Remote Controller (Digital Scanner) and VTR.	Remove obstacle.
	Batteries are exhausted.	Replace batteries.
	Battery polarities (+, −) are reversed.	Insert batteries correctly.
Bar code reading with Digital Scanner is impossible.	The scanner is in the power-saving standby condition.	Set the Digital Scanner On/Off Switch to "OFF" and then to "ON" again.
	The bar code has been traced too slowly.	Trace the bar code quickly.
	The bar code was not traced all the way from the Small Box past the last bar.	Trace the bar code correctly.
	The bar code was not traced straight.	Trace the bar code straight from left to right.
Transmission from the Digital Scanner to the VTR cannot be performed.	The VTR is turned off.	Turn the VTR on.
	The VTR is in an operation mode.	Put the VTR into the stop mode.
	There is no unoccupied timer programme number left.	A maximum of 8 timer recordings can be programmed at the same time.
	Reading a bar code was not followed by a "beep" sound from the Digital Scanner.	Perform the bar code reading again.
	The transmission was not followed by a repeated "beep" sound from the VTR.	Keep pressing the Transmit Button until the confirmation sound is heard.

SPECIFICATIONS

NV-FS1A, EA

Power Source:	NV-FS1A; 240 V AC 50–60 Hz NV-FS1EA; 230 V AC 50–60 Hz
Power Consumption:	NV-FS1A; Approx. 33 W NV-FS1EA; Approx. 29 W

Video Recording System:	2 rotary heads, helical scanning system
Tape Speed:	SP; 23.39 mm/sec. LP; 11.7 mm/sec.
Tape Format:	S-VHS / VHS tape
Record/Playback Time:	SP; 240 min. with NV-E240 VHS SP; 180 min. with NV-SE180 S-VHS LP; 480 min. with NV-E240 VHS LP; 360 min. with NV-SE180 S-VHS
FF/REW Time:	Less than 5.5 min. with NV-E180

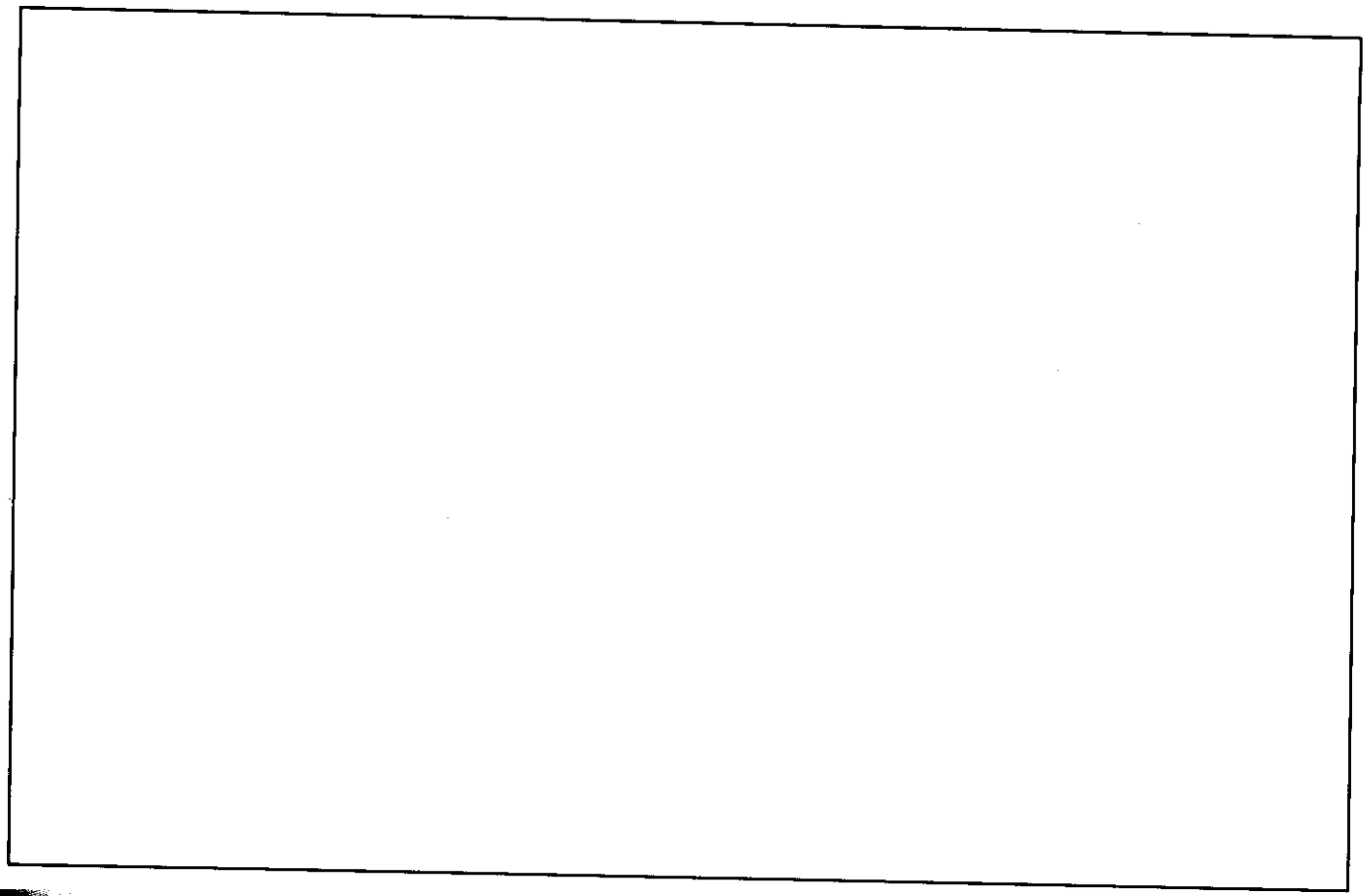
VIDEO

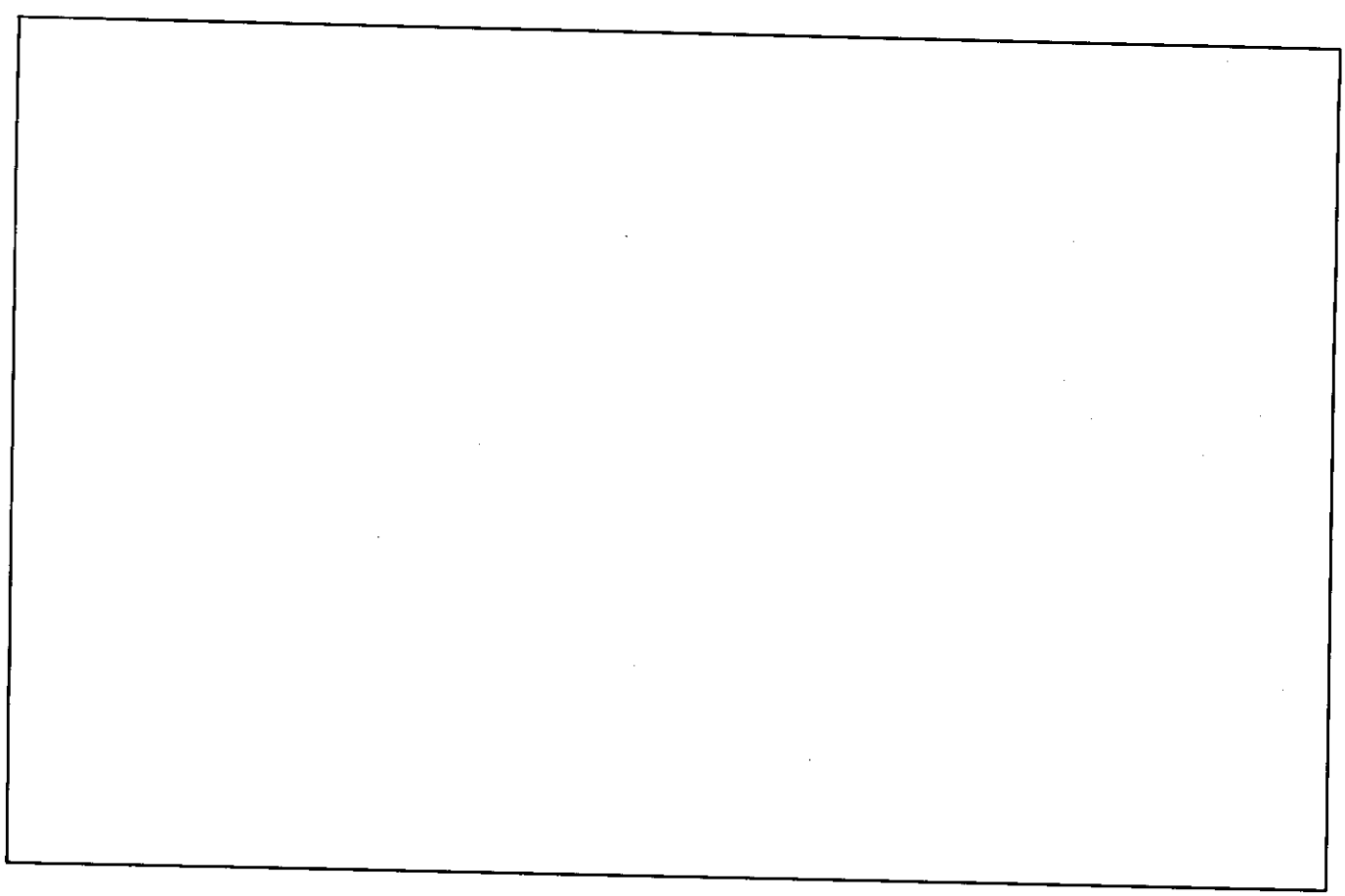
Television System:	CCIR; 625 lines, 50 fields, PAL colour signal		
Modulation System:	Luminance; FM azimuth recording Colour signal; converted subcarrier phase shift recording		
Input Level:	VIDEO IN (BNC);	1.0 Vp-p,	75 ohm, unbalanced
	S-VIDEO IN;	Y: 1.0 Vp-p,	75 ohm, unbalanced
		C: 0.6 Vp-p,	75 ohm, unbalanced
Output Level:	VIDEO OUT (BNC);	1.0 Vp-p,	75 ohm, unbalanced
	S-VIDEO OUT;	Y: 1.0 Vp-p,	75 ohm, unbalanced
		C: 0.6 Vp-p,	75 ohm, unbalanced
	RF Modulated; NV-FS1A;	VHF channel o or 1,	75 ohm, unbalanced
	NV-FS1EA;	VHF channel 2 or 3,	75 ohm, unbalanced

AUDIO

Input Level:	AUDIO IN (PHONO);	−10 dB,	more than 50 kohm, unbalanced
	MICROPHONE;	−70 dB	
Output Level:	AUDIO OUT (PHONO);	−8 dB,	less than 1 kohm, unbalanced
	HEADPHONES;	−30 dB,	8 ohm
Audio Track:	1 track (Normal-mono only), 2 channels (Hi-Fi sound-stereo)		
Video Horizontal Resolution:	Colour; more than 240 lines (VHS/SP) more than 400 lines (S-VHS/S-Video Socket)		
Dynamic Range:	Audio; more than 90 dB (Hi-Fi audio track)		
Audio Frequency Response:	20 Hz–20 kHz (Hi-Fi audio track)		
Wow and Flutter:	0.005% Wrms/Hi-Fi		
Operating Temperature:	5°C–40°C		
Operating Humidity:	35%–80%		
Weight:	7.0 kg		
Dimensions:	430 (W)×109.5 (H)×357 (D) mm		
Standard Accessories:	1 pc. DIN-DIN Coaxial Cable 1 pc. Programmable Remote Controller 2 pcs. "R6" size batteries 2 pcs. Stereo type Phono Cables 1 pc. Digital Scanner (with Programming Sheet) 4 pcs. "R03" size batteries (for Digital Scanner) 1 pc. AC Mains Lead 1 pc. S-Video Cable		

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.





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